

FIELD MAINTENANCE PRINT SET

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FP780

**Field Maintenance
Print Set**

PRINT SET ORDER NO.
MP00565

EN-01124-16-N675-(327)

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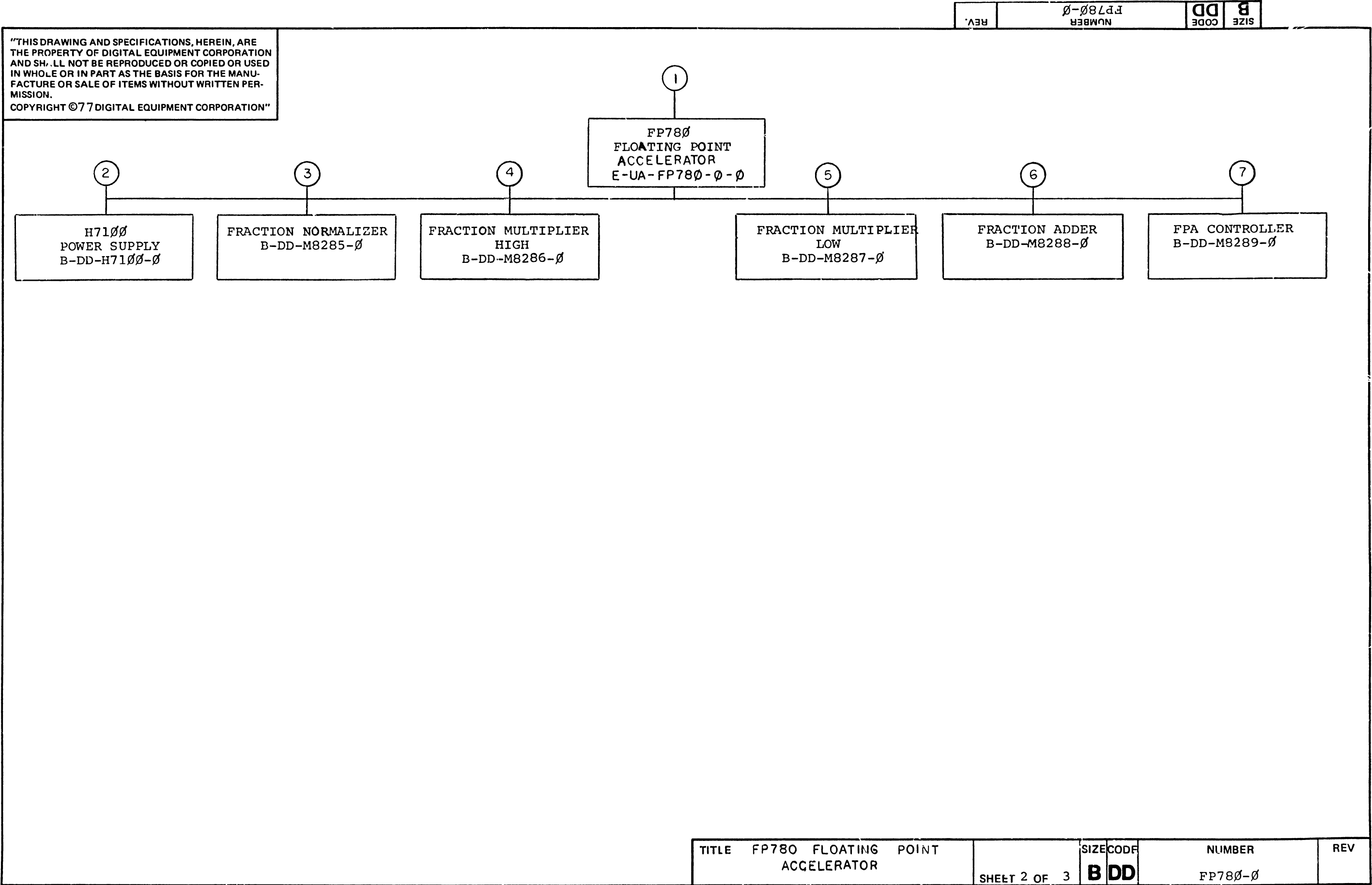
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FOR FIELD MAINTENANCE PRINT SET SEE: B-TC-FP78Ø-Ø-1

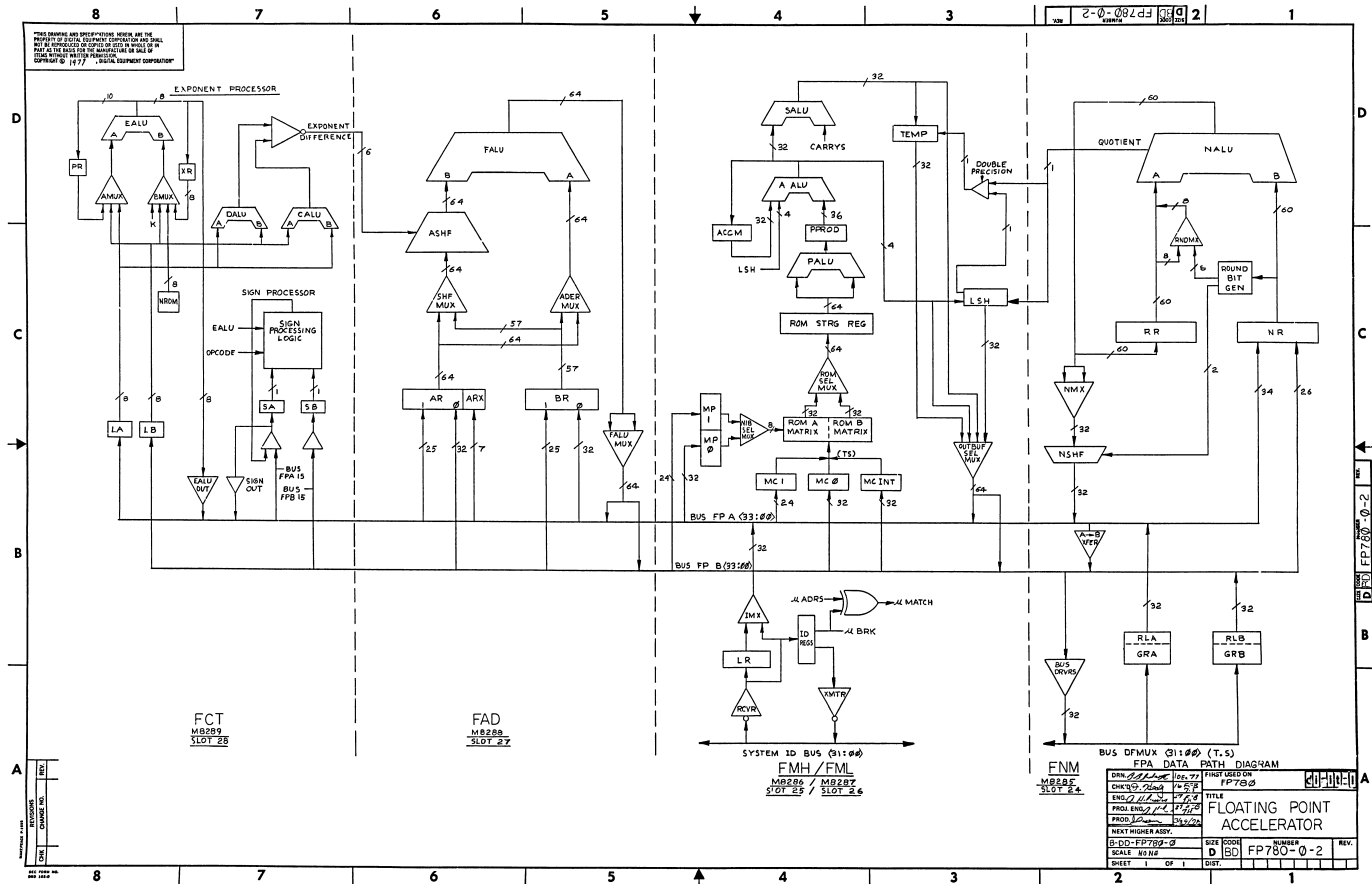
UNIT VARIATIONS

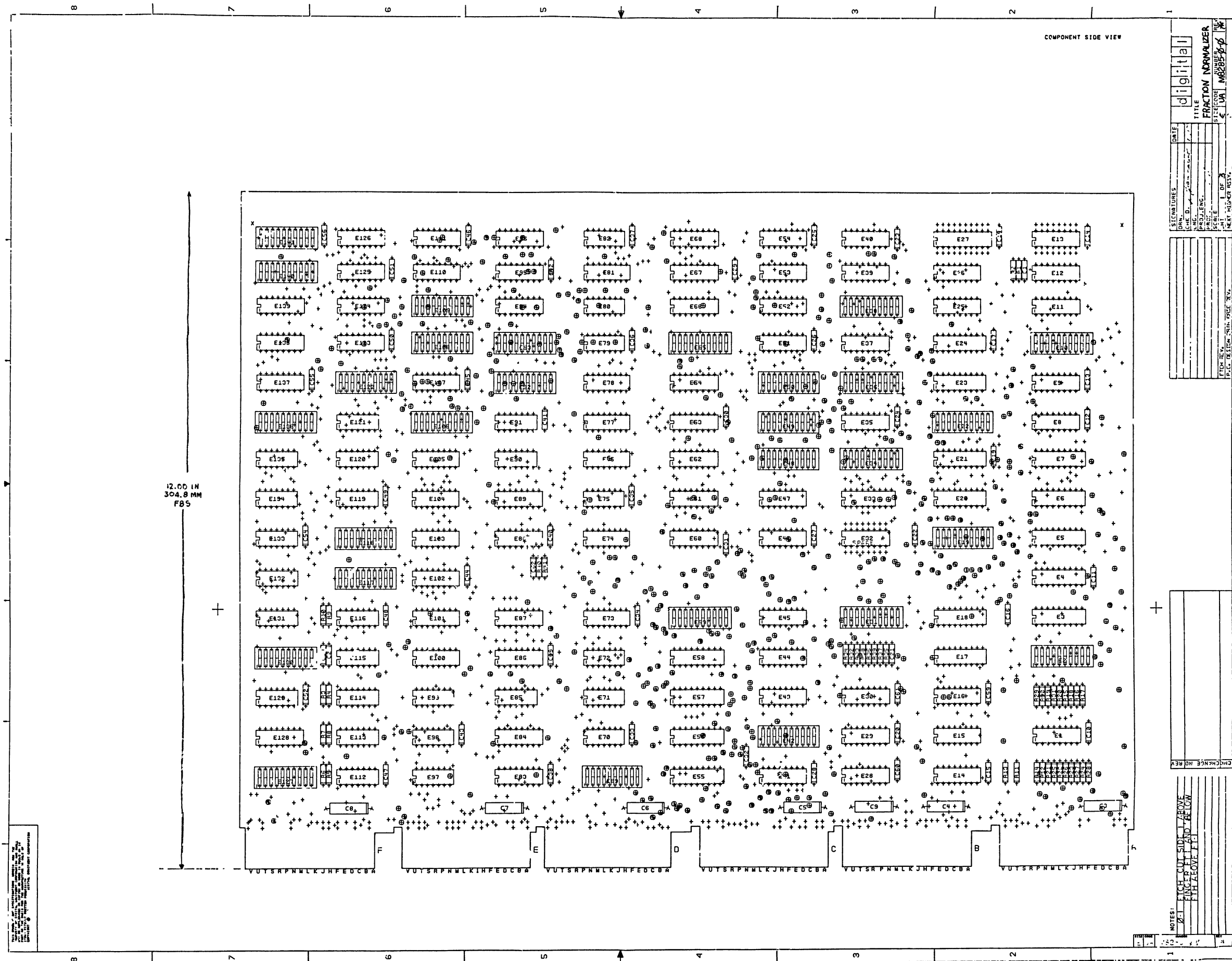
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LINE	ITEM	TOP DOCUMENT	PART NUMBER	MIN REV	DESCRIPTION	QTY PER VARIATION		
						RA	RB	RC
						VARIATION REVISION LEVEL:		
						A1	A1	A1
1	1	B-DD-H7100-C-0	H7100-A		11780 500 WATT SUPPLY: 5V 100A,1	1	-	-
2	2	B-DD-H7100-0-0	H7100-B		11780 500-WATT SUPPLY: 5V 100A,2	-	1	-
3	3	B-DD-M8285-0	B2M8285-00		REFURBISHED M8285	1	1	1
4	4	B-DD-M8286-0	B2M8286-00		REFURBISHED M8286	1	1	1
5	5	B-DD-M8287-0	B2M8287-00		REFURBISHED M8287	1	1	1
6	6	B-DD-M8288-0	B2M8288-00		REFURBISHED M8288	1	1	1
7	7	B-DD-M8289-0	B2M8289-00		REFURBISHED M8289	1	1	1
8	8	A-PS-3615084-0-0	3615084-00		LABEL,MODULE UTILIZATION,KA780	1	1	-
9	9	D-1A-7014249-0-0	7014249-0L		CABLE POWER BLACK	4	4	-
10	10	D-1A-7014530-0-0	7014530-0L		CABLE POWER RED	4	4	-
11	11	D-1A-7014213-0-0	7014213-0K		CAB OVER TEMP	1	1	-
12	12		9009185-00	B	JUMPER, WIRE, INSULATED, BLACK B	14	14	-
13	13		9006073-01	A	SCREW,MACH PAN PHIL 10-	8	8	-
14	14		9007906-00	A	WASHER,HELICAL SPLIT STEEL	8	8	-
15	15	D-1C-11780-0-3			11780 SUB SYSTEM INTERCONNECT	REF	REF	-

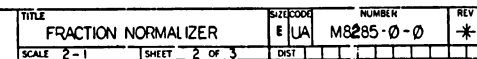
REVISION HISTORY			BASIC PART NO: FP780		DRN: D. RICHARD	DATE: 21-JAN-85	D I G I T A L		
ENG	ECO NUMBER	REV	SECTION A OF A		CHK'D: D. HEALY	DATE: 13-FEB-85	TITLE PARTS LIST		
---	INITIAL	A	SECTION VARIATION INDEX				REFURBISHED FP780		
MJ	FP780-R-TW001	B	(A)RA,RB,RC						
			(B)		DES.ENG: P. GREENAWAY	DATE: 13-FEB-85	DOCUMENT NUMBER		
			(C)				SIZE	CODE	NUMBER
			(D)		RESP.ENG.: M. JOHNSON	DATE: 13-FEB-85	K	PL	FP780-0-DBP
			(E)						
			(F)		MFG.ENG.: J. ELLOWITZ	DATE: 13-FEB-85	RELEASE DATE: 09-OCT-85		
					ASSEMBLY NUMBER:	TOP DOCUMENT NUMBER:	FILE NAME:		EDIT #
						K-PL-FP780-0-DBP	ML877B.PLS		4
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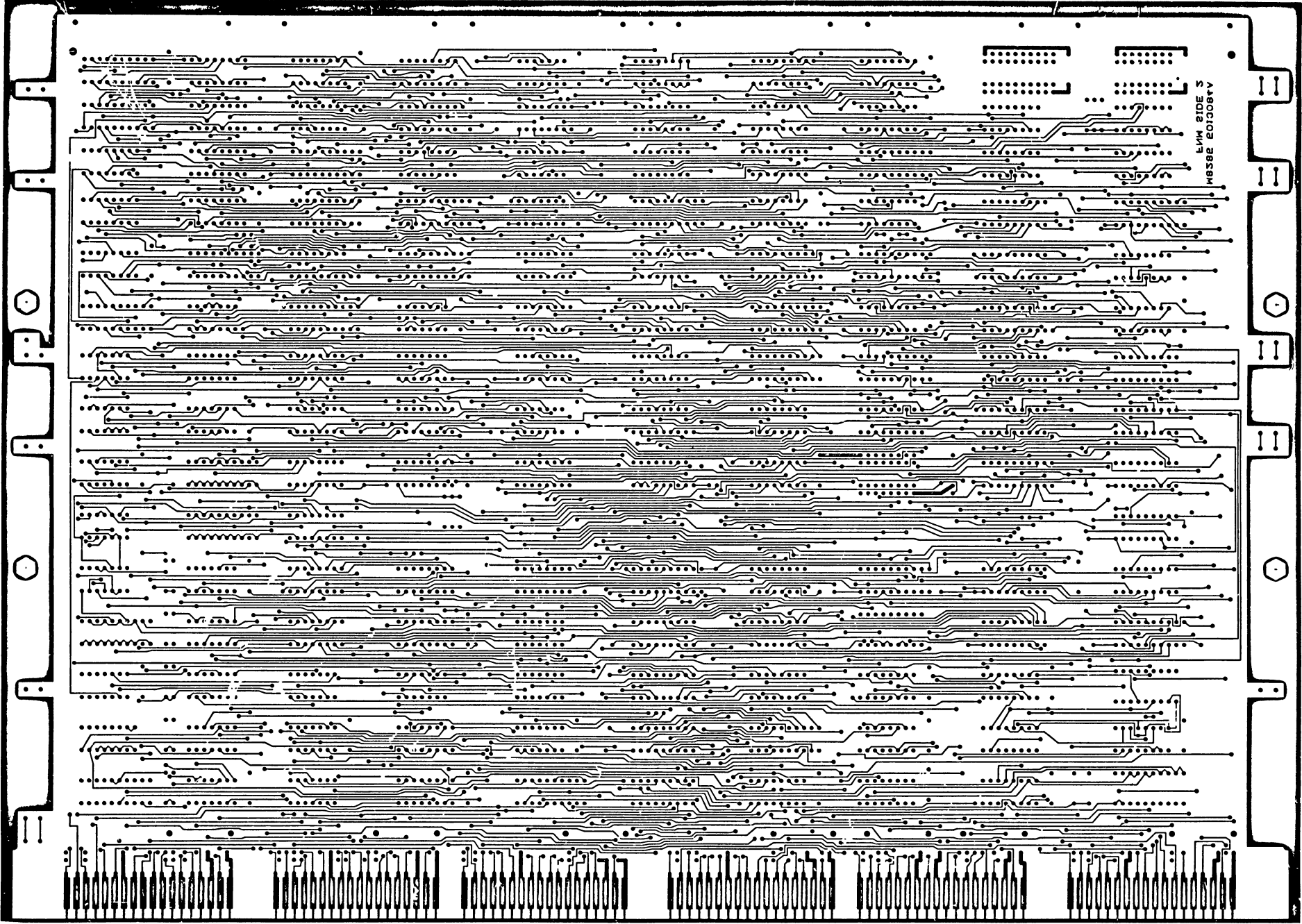
REVISIONS		
CHK	CHANGE NO	REV

DEC FORM NO 8
REV. 108



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LAYER 4



ASSEMBLY SIDE 3
M8285-0103084

REVISIONS		
CHG	CHANG' NO	REV

DES: 1086 NO
REV: 04

TITLE		SHEET CODE	NUMBER	REV
FRACTION NORMALIZER		E UA	M8285-0-0	*
SCALE 2-1	SHEET 3 OF 3	DIST	1	1

DIGITAL EQUIPMENT CORPORATION PARTS LIST				QUANTITY / VARIATION												NOTES:							
MADE BY DATE		M. FUNARO 20 JULY 77		CHECKED DATE		J. Giammarino 9-6-77		SECTION															
ENG DATE		Stan Lache 4-oct-77		PROD DATE		Mike Tenillo 9-27-77		ISSUED SECTION															
ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION	M8285-0-0													REF DESIGNATION						
1	D-MD-5013084-0-0	5013084	ETCH BOARD																				
2		1910532	I.C. DEC 74S00	3													E79, E85, E116						
3		1910534	I.C. DEC 74S04	4													E75, E97, E99, E133						
4		1912389	I.C. DEC 74S08	2													E98, E129						
5		1910539	I.C. DEC 74S20	1													E112						
6		1912746	I.C. DEC 74S37	3													E70, E82, E119						
7		1910541	I.C. DEC 74S40	1													E90						
8		1911712	I.C. DEC 74S51	3													E72, E91, E120						
9		1910542	I.C. DEC 74S64	7													E114, E115, E121, E131, E132, E134, E135						
10		1910544	I.C. DEC 74S74	3													E71, E80, E113						
11		1910548	I.C. DEC 74S157	11													E52, E53, E62, E63, E64, E76, E77, E78, E81, E95, E105						
12		1910549	I.C. DEC 74S158	2													E84, E83						
13		1912097	I.C. DEC 74S182	5													E37, E51, E94, E110, E139						
14		1910552	I.C. DEC 74S194	32													E8, E9, E11, E12, E39, E40, E41, E43, E44, E46, E54, E66, E67, E68, E86, E87, E88, E89, E96, E100, E101, E102, E103, E104, E107, E111, E123, E124, E125, E126, E137, E138						
15		1913493	I.C. DEC 74S241	1													E69						
16		1913670	I.C. DEC 74S373	8													E2, E10, E19, E22, E31, E34, E42, E59						
17		1913700	I.C. DEC 74S381	15													E36, E38, E48, E49, E50, E65, E92, E93, E106, E108, E109, E122, E136, E140, E141						
18		23034B1-00	I.C. 256 X 8 BI POLAR TRI-STATE PROM	1													E127						
E.C.O. NO.																							
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								SHEET 1 OF 2				INSERTION PARTS LIST DATA BASE REV A											

DIGITAL EQUIPMENT CORPORATION PARTS LIST				QUANTITY / VARIATION												NOTES:			
MADE BY M. FUNARO DATE 20 JULY 77		CHECKED <i>L. Giannmarino</i> DATE 9-6-77		SECTION															
ENG <i>Stan Lockery</i> DATE 4-Oct-77		PROD <i>Mike Tuella</i> DATE 9-27-77		ISSUED SECTION															
ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION	M8285-Ø-Ø													REF DESIGNATION		
19		1912693	I.C. DEC 25S1Ø	9													E25,E26,E35,E45,E47,E60,E61,E73,E74		
20		1912586	I.C. DEC 85S6Ø	16													E3,E4,E5,E6,E7,E17,E18,E20,E21,E23,E24,E33,E55,E56,E57,E58		
21		1913888-00	I.C. DEC DC1Ø2	3													E117,E118,E130		
22		1913294	I.C. DEC 93S16	1													E128		
23		1911402	I.C. DEC 10105	1													E16		
24		1911403	I.C. DEC 10106	1													E15		
25		1911415-01	I.C. DEC 10125-1	3													E28,E29,E30		
26		1913220-00	I.C. DEC 10216	1													E14		
27		1911413	I.C. DEC 10121	1													E1		
28		1301972	RESISTOR, 270 OHM, 1/4W, 5%	6													R1,R3,R5,R7,R9,R40		
29		1301890	RESISTOR, 560 OHM, 1/4W 5%	6													R2,R4,R6,R8,R10,R41		
30		1300295	RESISTOR, 330 OHM, 1/4W, 5%	13													R15 thru R20,R29 thru R35		
31		1300247	RESISTOR, 120 OHM, 1/4W, 5%	8													R11,R12,R25,R26,R27,R28,R36,R37		
32		1300250	RESISTOR, 150 OHM, 1/4W, 5%	8													R13,R14,R21,R22,R23,R24,R38,R39		
33		1012084-01	CAPACITOR, 8 uf, 25 V	7													C3 thru C9		
34		1012784	CAPACITOR, .047 uf, 50 V	55													C1,C2,C10 thru C56,C62,C59,C60,C61		
35		1210711-02	HANDLE	1															
36		9000024-01	EYELETS	12															
37			SPARE ICS	3													E13,E27,E32		
E.C.O. NO.																			
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								SHEET 2 OF 2				INSERTION PARTS LIST DATA BASE REV A							

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1-0-0828W

2

1

D

D

C

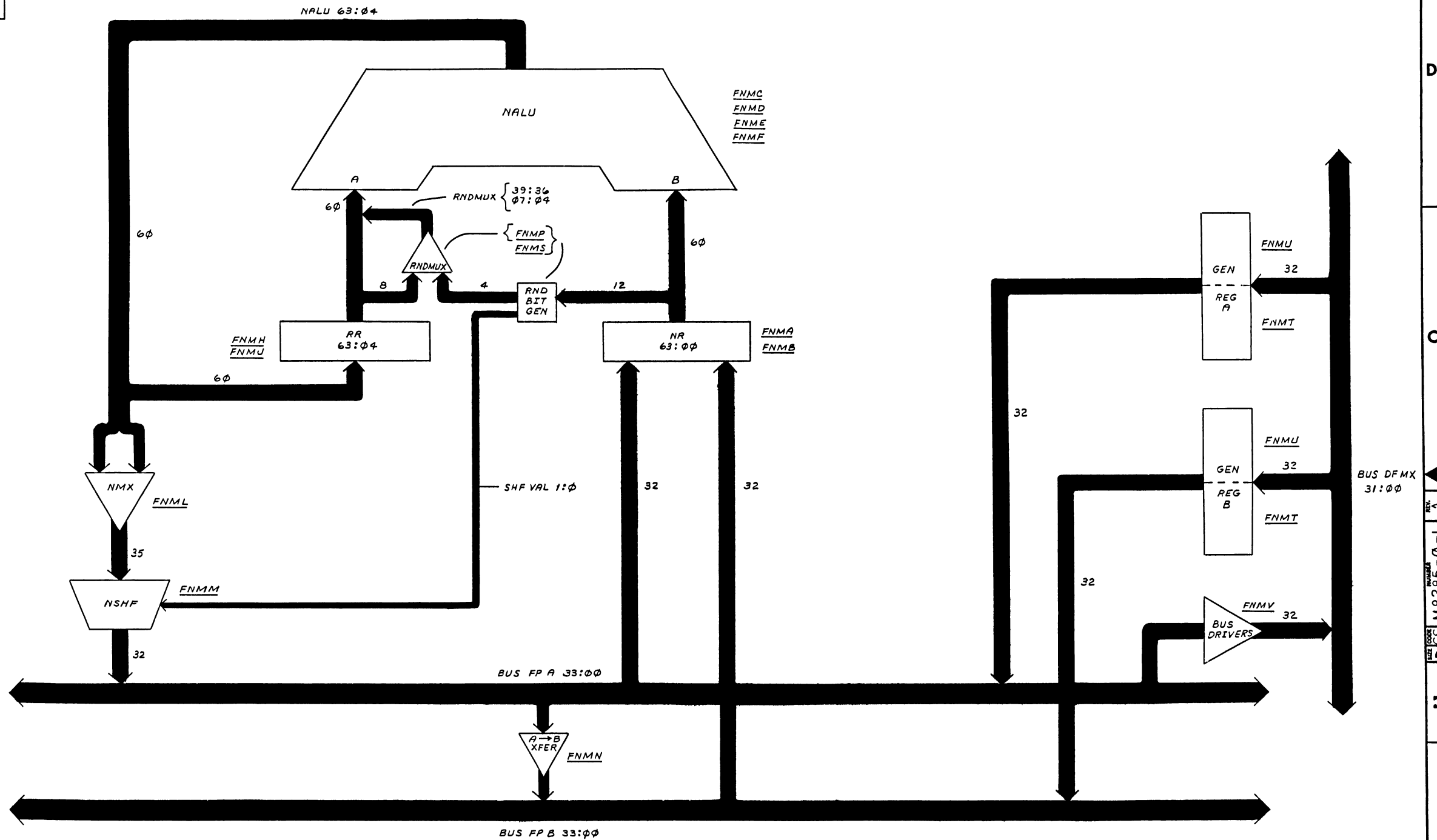
C

B

B

A

A



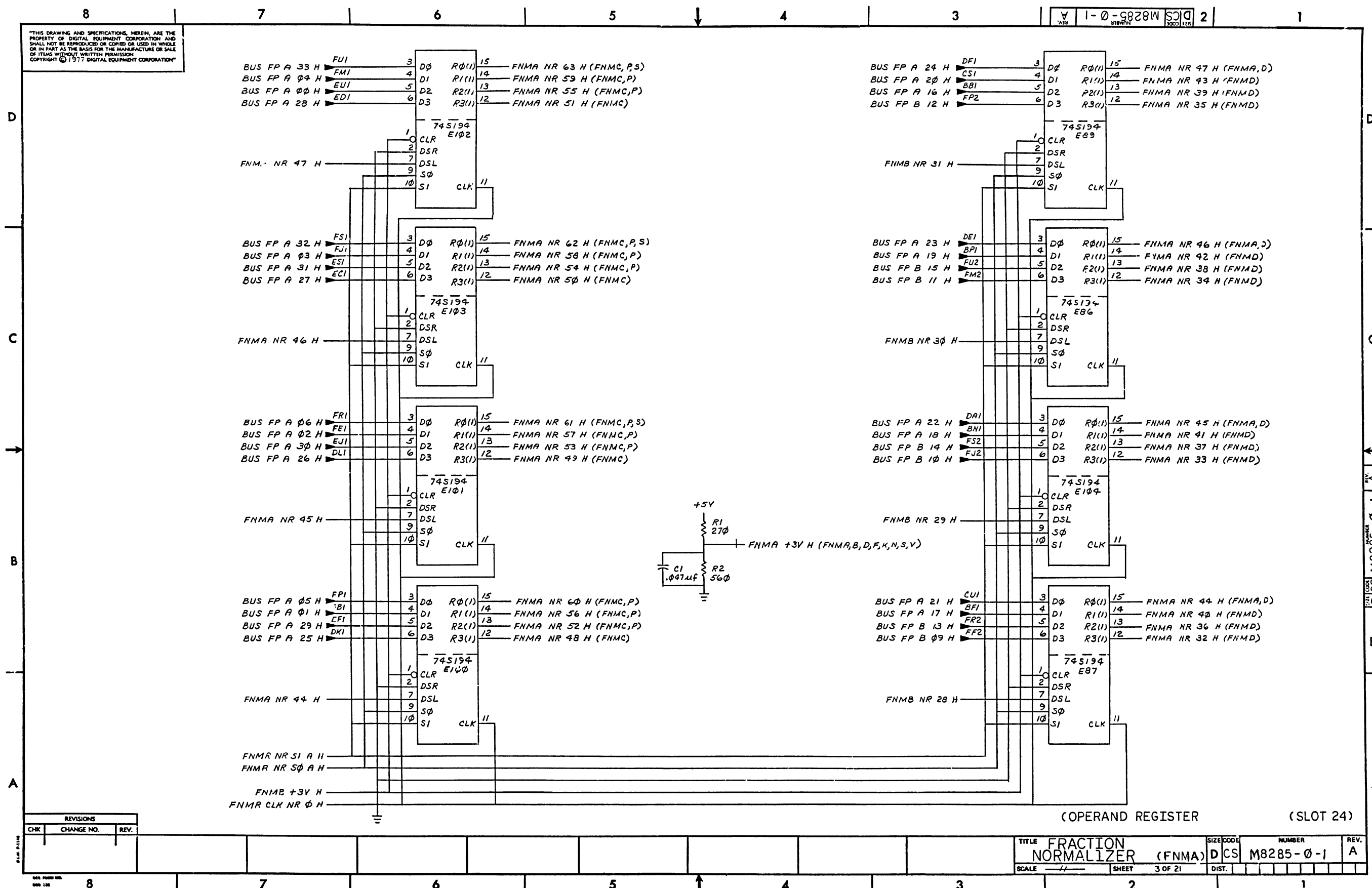
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A		1	10-4-77	S. LACKY	
B		2	10-4-77	S. LACKY	
C		3	10-4-77	S. LACKY	
D		4	10-4-77	S. LACKY	

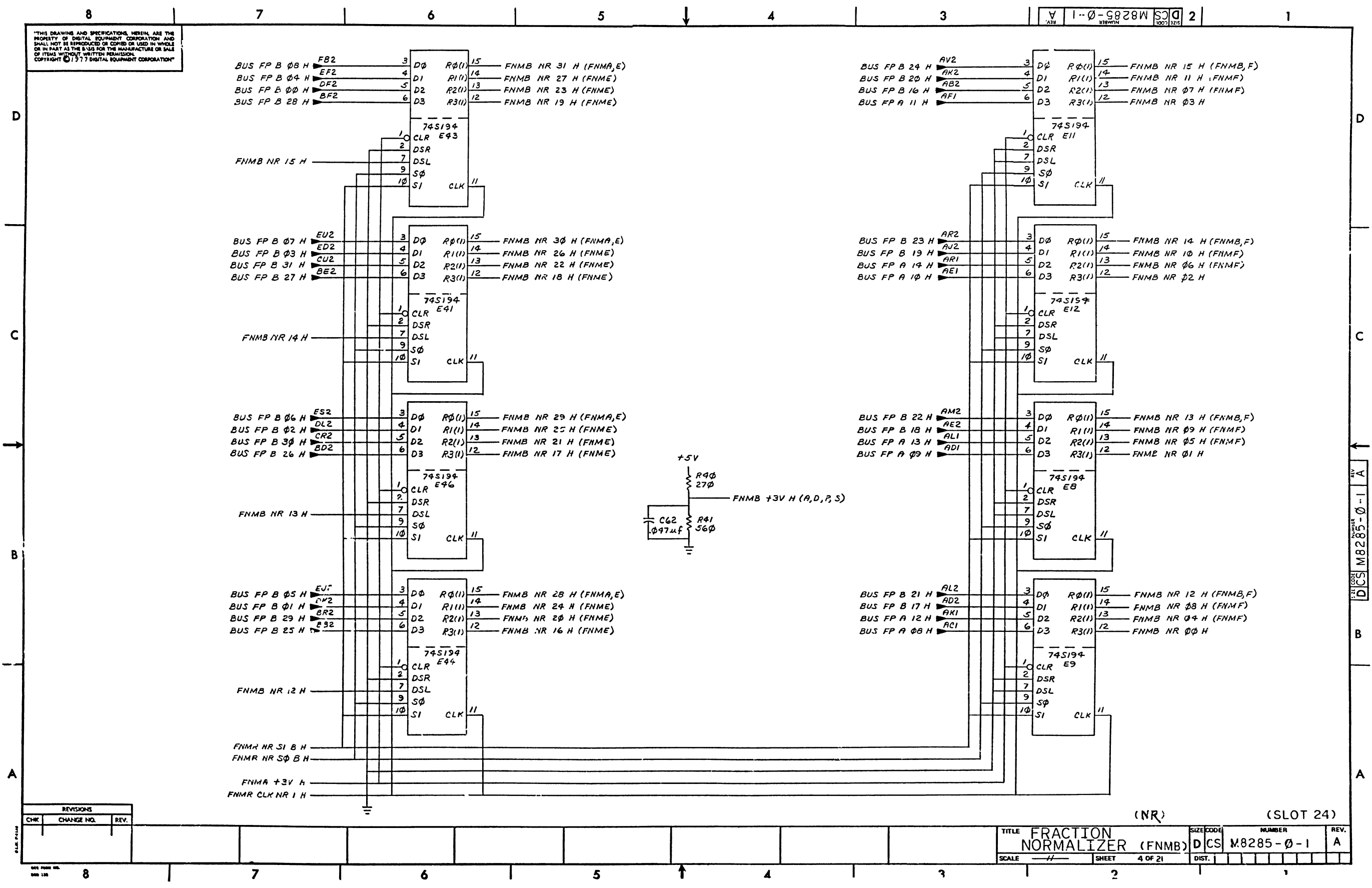
DRN. J. Viner, E.	8-12-77	FIRST USED ON	
CHK'D J. Viner, E.	10-4-77	TITLE	FRACTION NORMALIZER (FNM)
ENG. Stan Lacky	10-4-77	SIZE	D
PROJ. ENG. Stan Lacky	10-4-77	CODE	CS
PROD. Prod. 001	10-4-77	NUMBER	M8285-0-1
NEXT HIGHER ASSY.		REV.	A
SCALE	1/1	DIST.	
SHEET	1 OF 21		



(SLOT 24)

TITLE FRACTION NORMALIZER		SIZE CODE DCS	NUMBER M8285 - Ø-1		REV. A
SCALE $\frac{1}{2}$	SHEET 2 OF 21	DIST.			



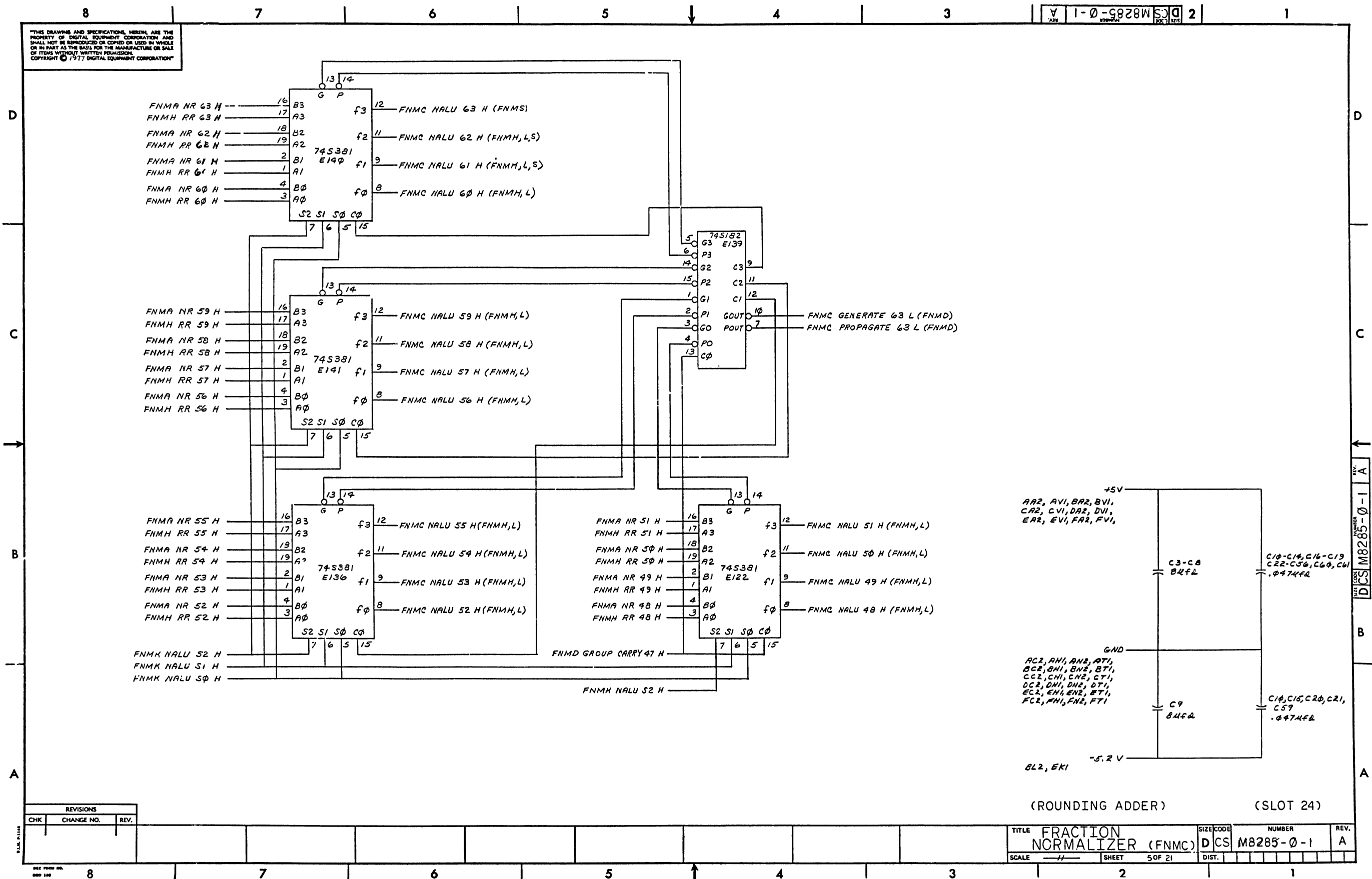


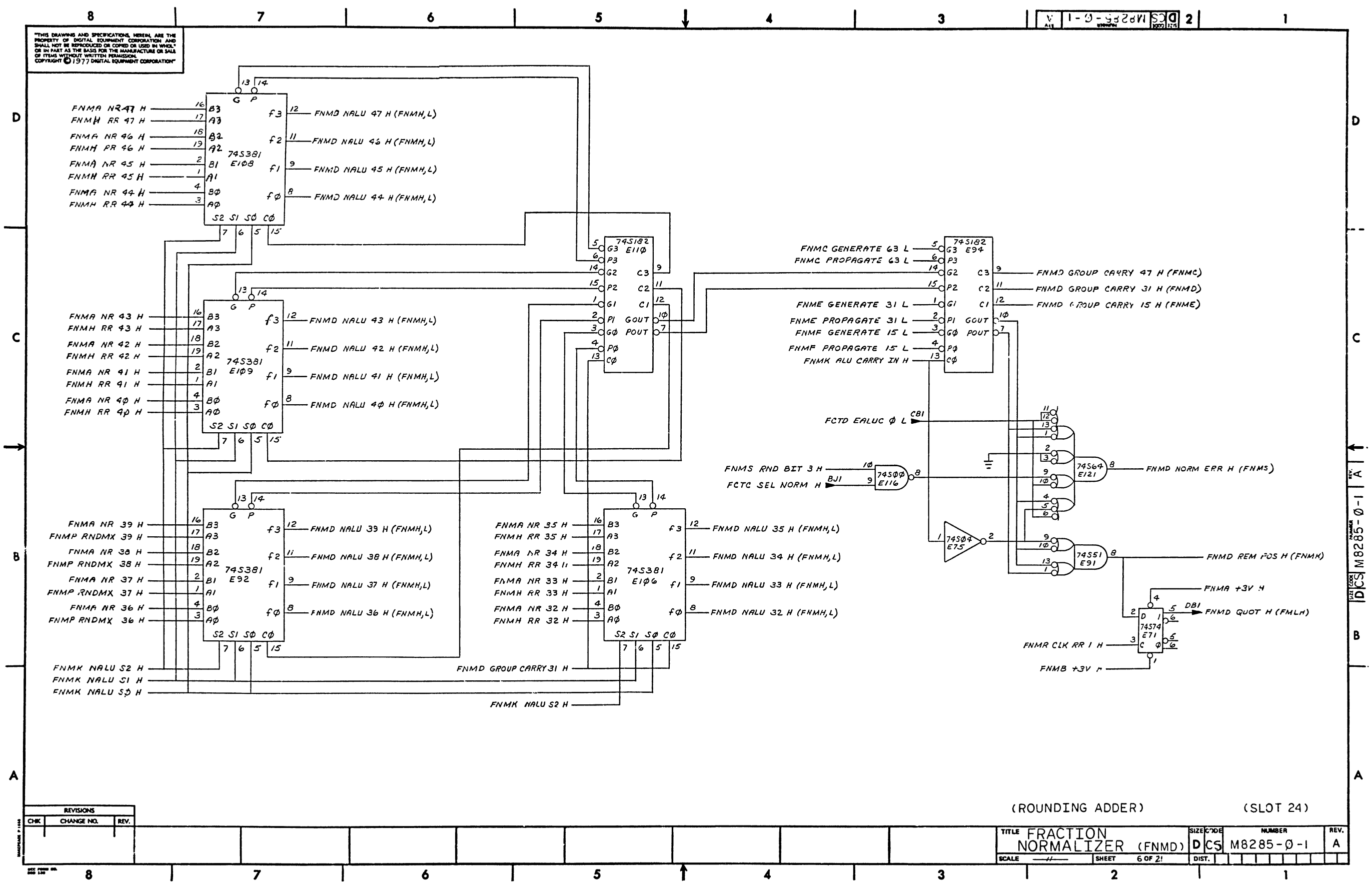
REV. A
M8285-0-1
D CS

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REVISIONS		
CHK	CHANGE NO.	REV.

TITLE		SIZE CODE	NUMBER	REV.
FRACTION NORMALIZER (FNMB)		D CS	M8285-0-1	A
SCALE	SHEET	DIST.		
1/8"	4 OF 21			





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1-0-9328VI 2

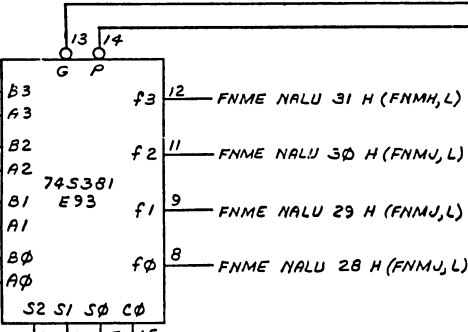
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CHK	CHANGE NO.	REV.

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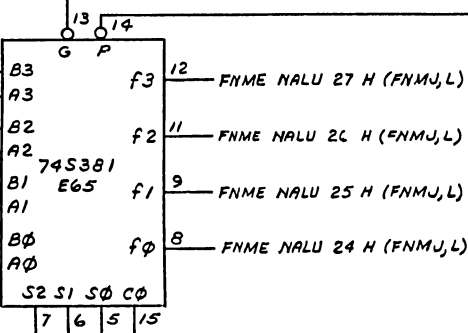
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SCALE	1/1	SHEET	6 OF 21	A
DIST.				

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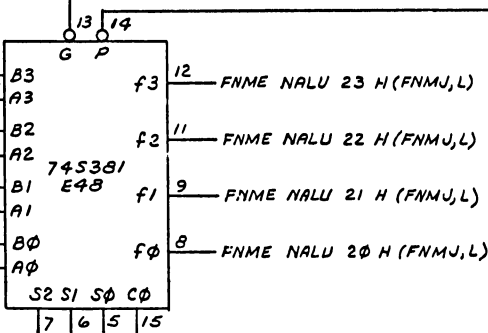
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FNMB NR 29 H 2 B1
FNMJ RR 29 H 1 A1
FNMB NR 28 H 4 B0
FNMJ RR 28 H 3 A0



FNMB NR 27 H 16 B3
FNMJ RR 27 H 17 A3
FNMB NR 26 H 18 B2
FNMJ RR 26 H 19 A2
FNMB NR 25 H 2 B1
FNMJ RR 25 H 1 A1
FNMB NR 24 H 4 B0
FNMJ RR 24 H 3 A0



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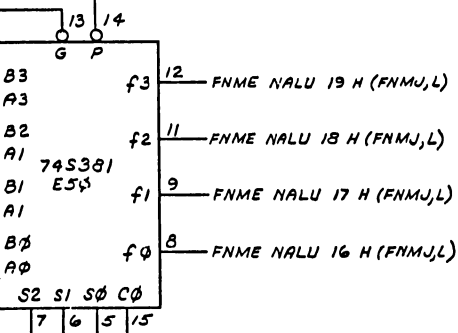


FNMK NALU S2 H
FNMK NALU S1 H
FNMK NALU S0 H

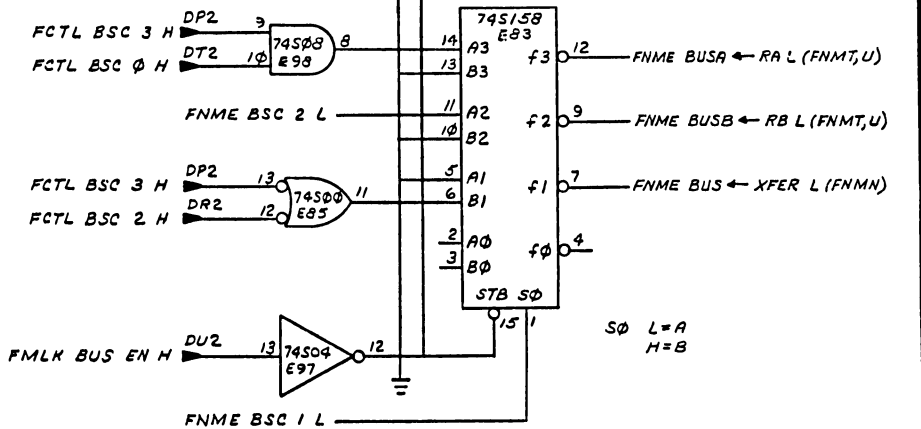
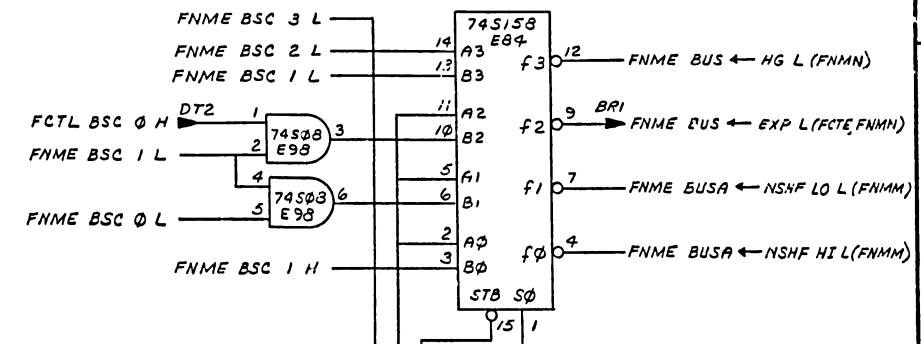
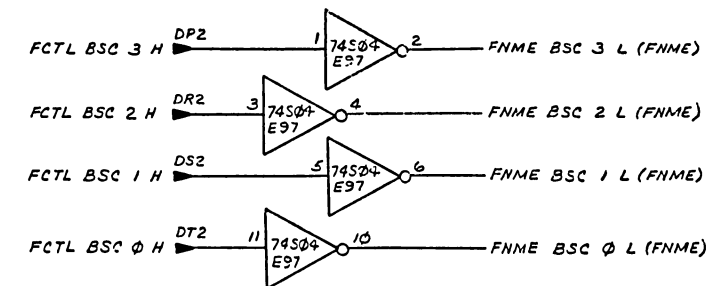
FNMD GROUP CARRY 15 H

FNMK NALU S2 H

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FNMB NR 17 H 2 B1
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FNMJ RR 16 H 3 A0



FNME GENERATE 31 L (FNMD)
FNME PROPAGATE 31 L (FNMD)



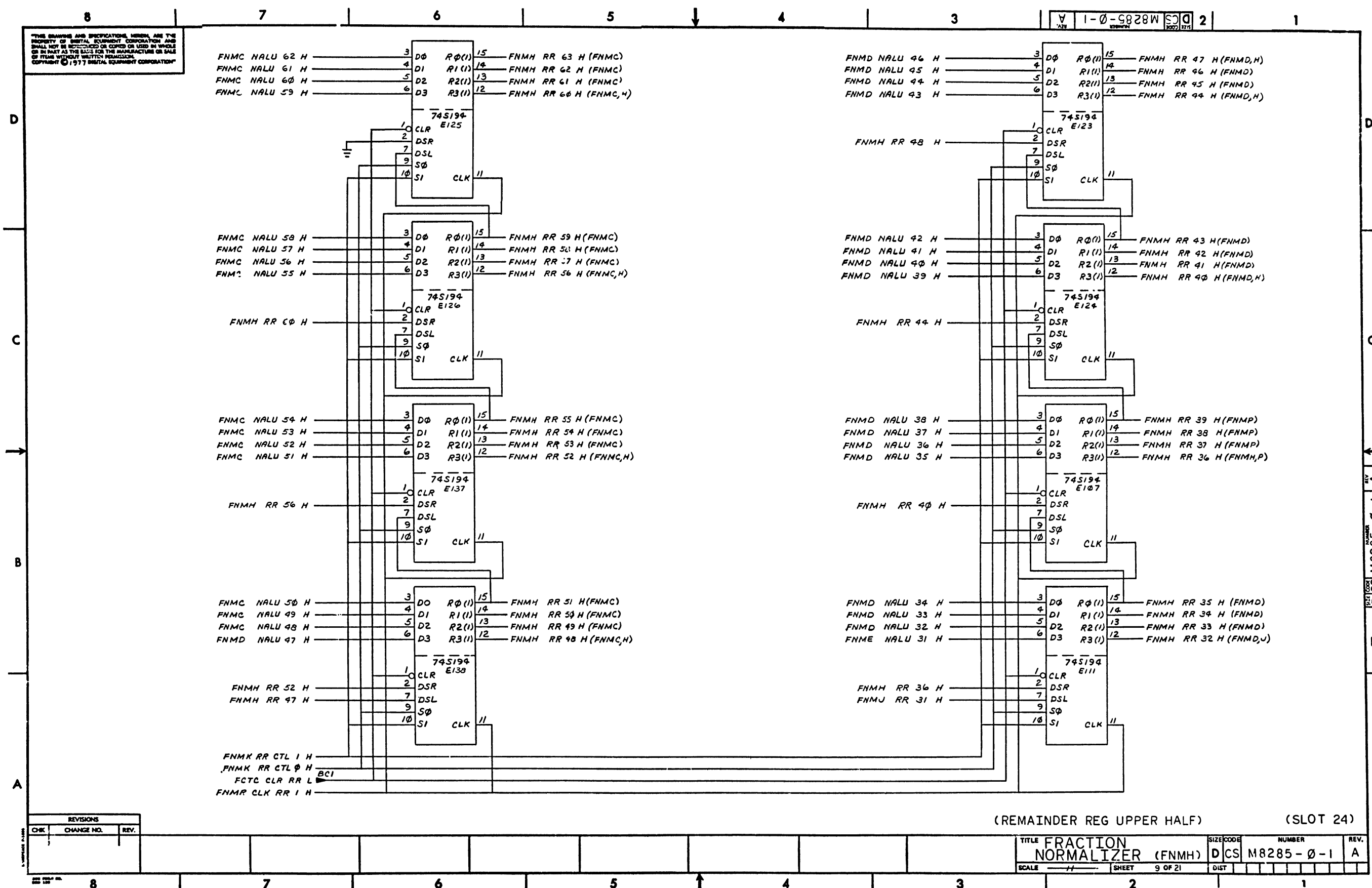
S0 L=A
H=B

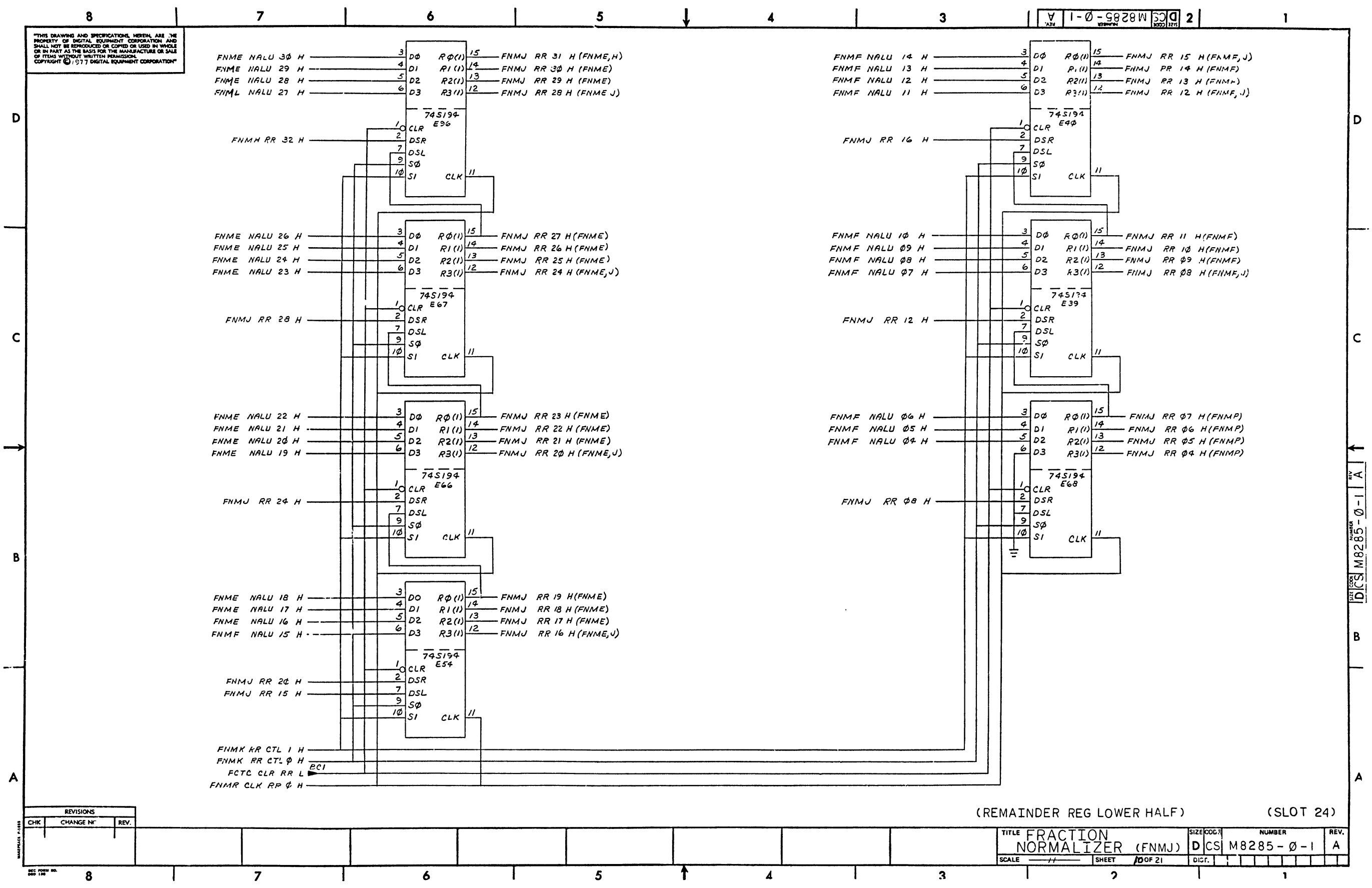
(ROUNDING ADDER)

(SLOT 24)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE		SIZE CODE	NUMBER	REV.
FRACTION NORMALIZER (FNME)		D CS	M8285-0-1	A
SCALE	SHEET	7 OF 21	DIST.	



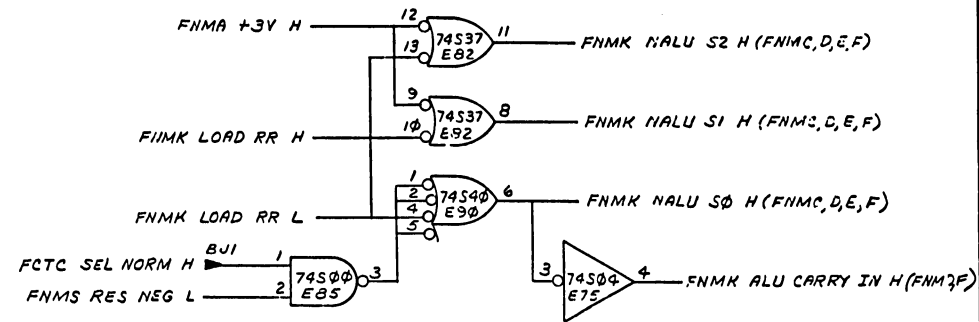
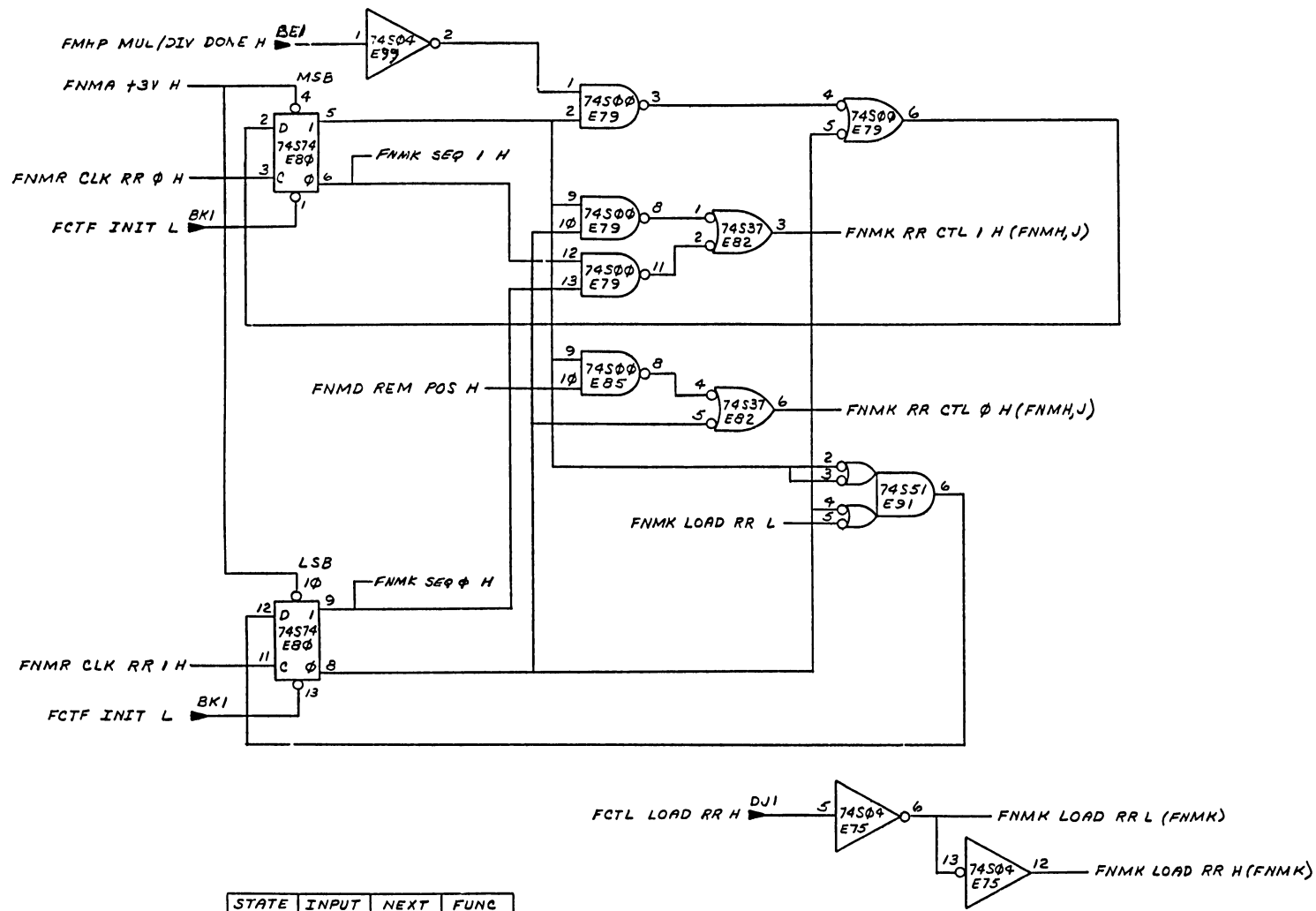


REV. 1
D CS M8285-0-1 A

REVISIONS		
CHK	CHANGE NO.	REV.

(REMAINDER REG LOWER HALF)		(SLOT 24)	
TITLE FRACTION NORMALIZER (FNMJ)		SIZE CODE D CS	NUMBER M8285-0-1
SCALE 1/1	SHEET 10 OF 21	DIGIT.	REV. A

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ALU CONTROL				
MICROCODE	ALU	S2	S1	S0
LOAD RR	A OR B	1	0	1
BMX NORM	A ± B	0	1	0
DIVIDE	A - B	0	1	0

0 SELECTED BY HARDWARE

REV. A
DCS M8285-0-1

B

A

REVISIONS		
CHK	CHANGE NO.	REV.

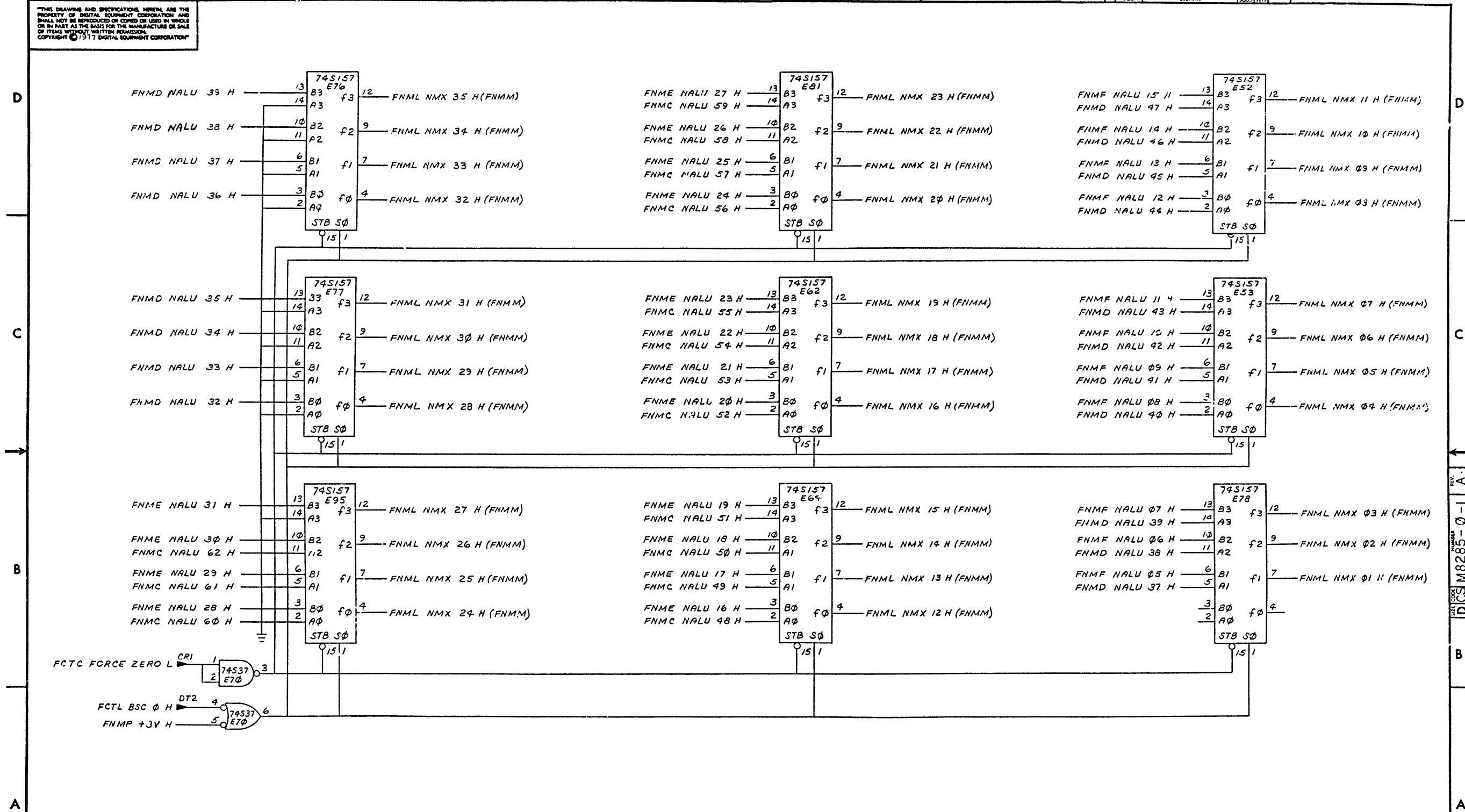
(RR & NALU OP CTL)

(SLOT 24)

TITLE	SIZE CODE	NUMBER	REV.
FRACTION NORMALIZER (FNMK)	DCS	M8285-0-1	A
SCALE	SHEET	DIST.	
	11 OF 21		

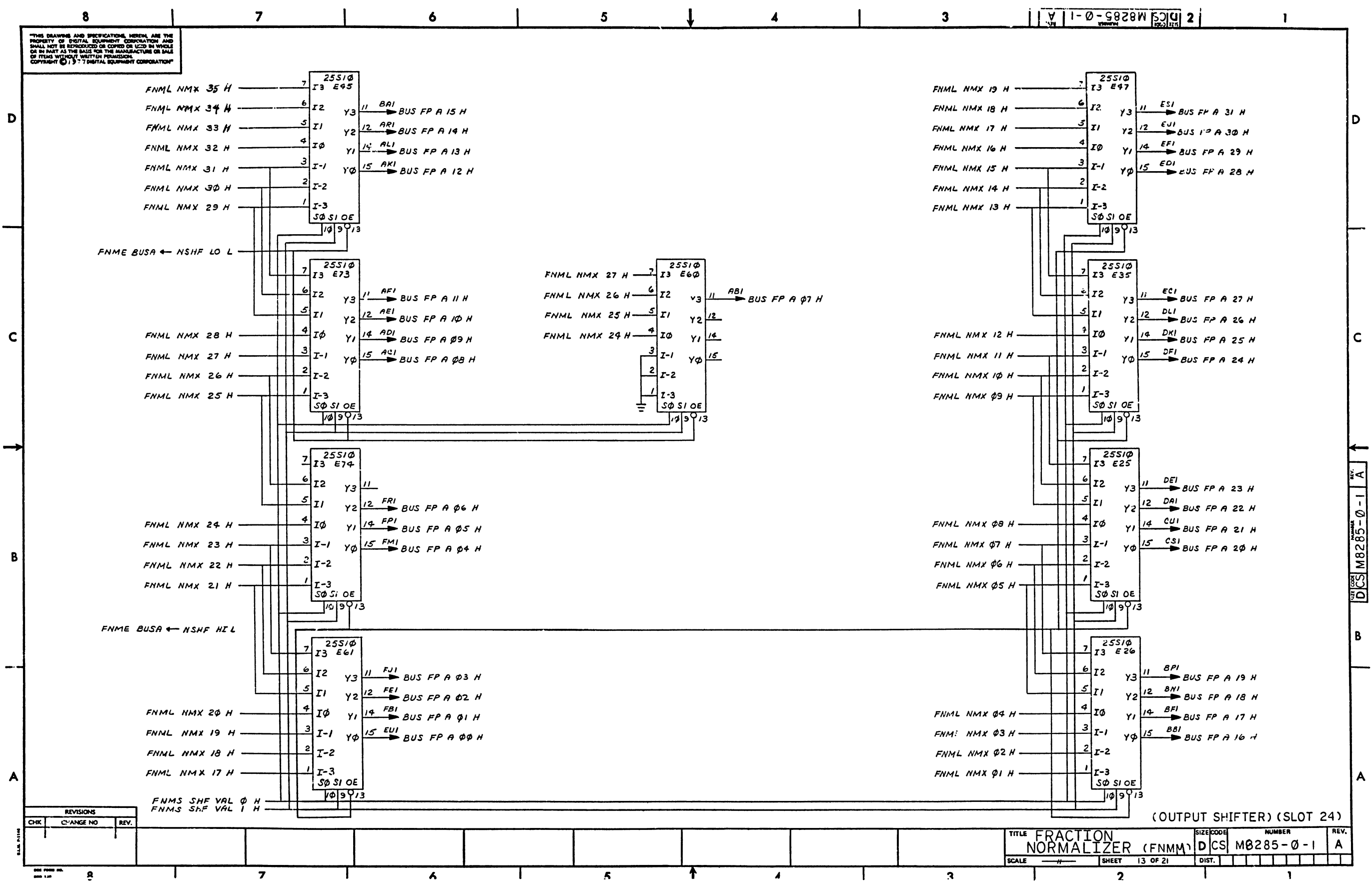
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1-0-58285-01 2



REVISIONS		
CHK	CHANGE NO.	REV.

TITLE		SIZE	CODE	NUMBER	REV.
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SCALE		SHEET		12 OF 21	
DIST.					



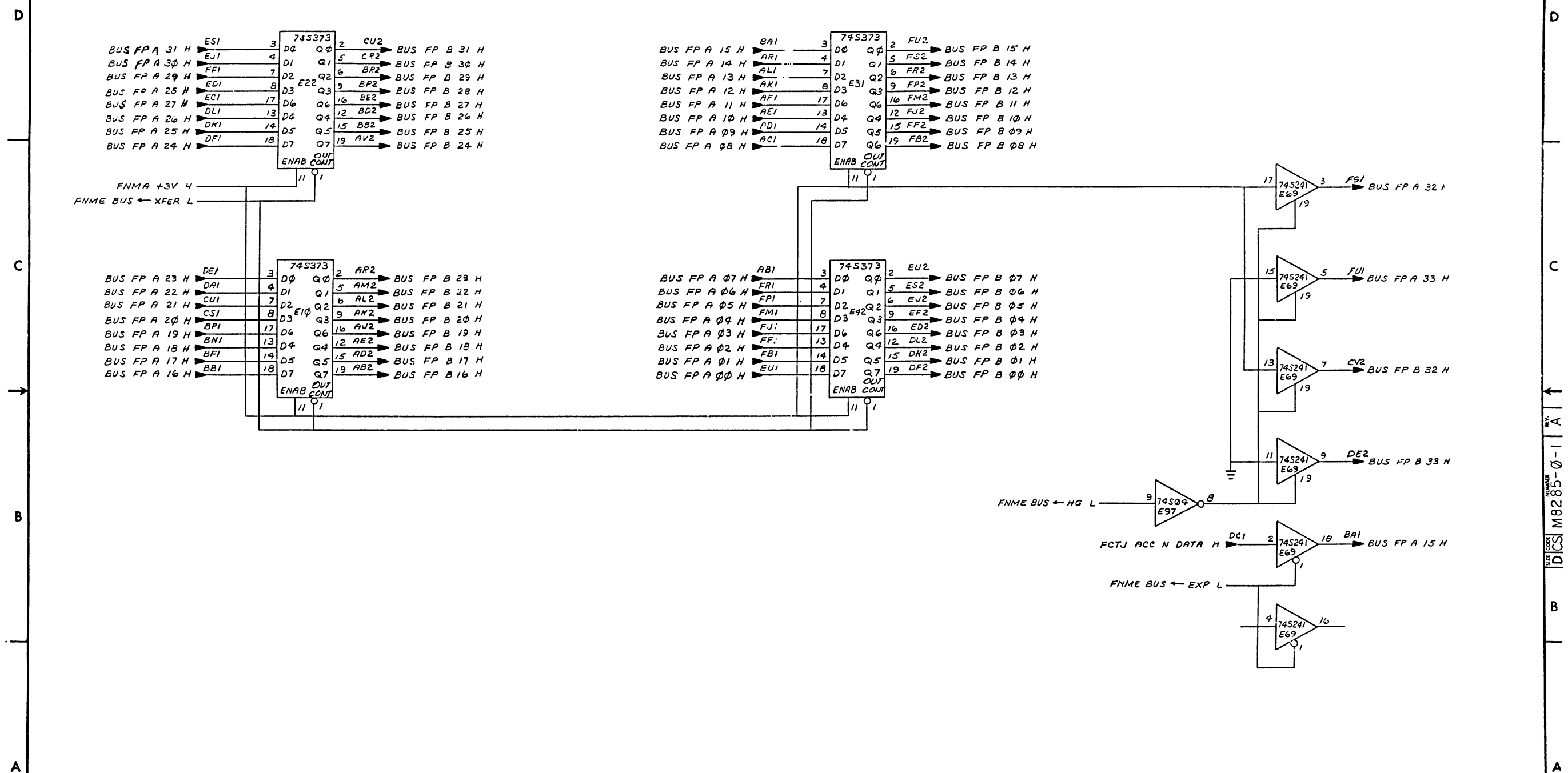
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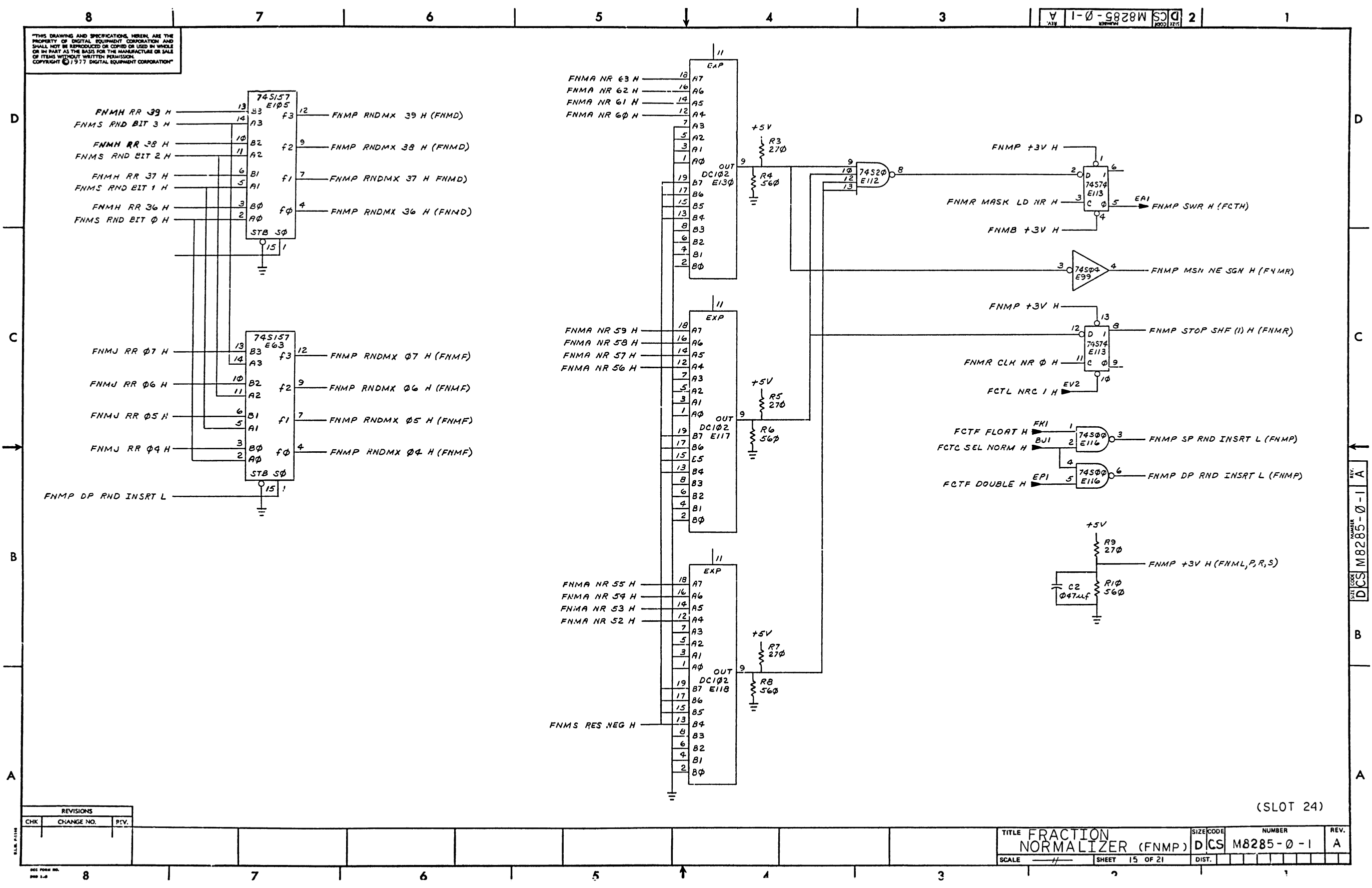
1-0-5828W ECU 2

REVISIONS		
CHK	CHANGE NO	REV.

TITLE		SIZE CODE	NUMBER	REV.
FRACTION NORMALIZER (FNMM)		DCS	M8285-0-1	A
SCALE	SHEET	DIST.		
1:1	13 OF 21			

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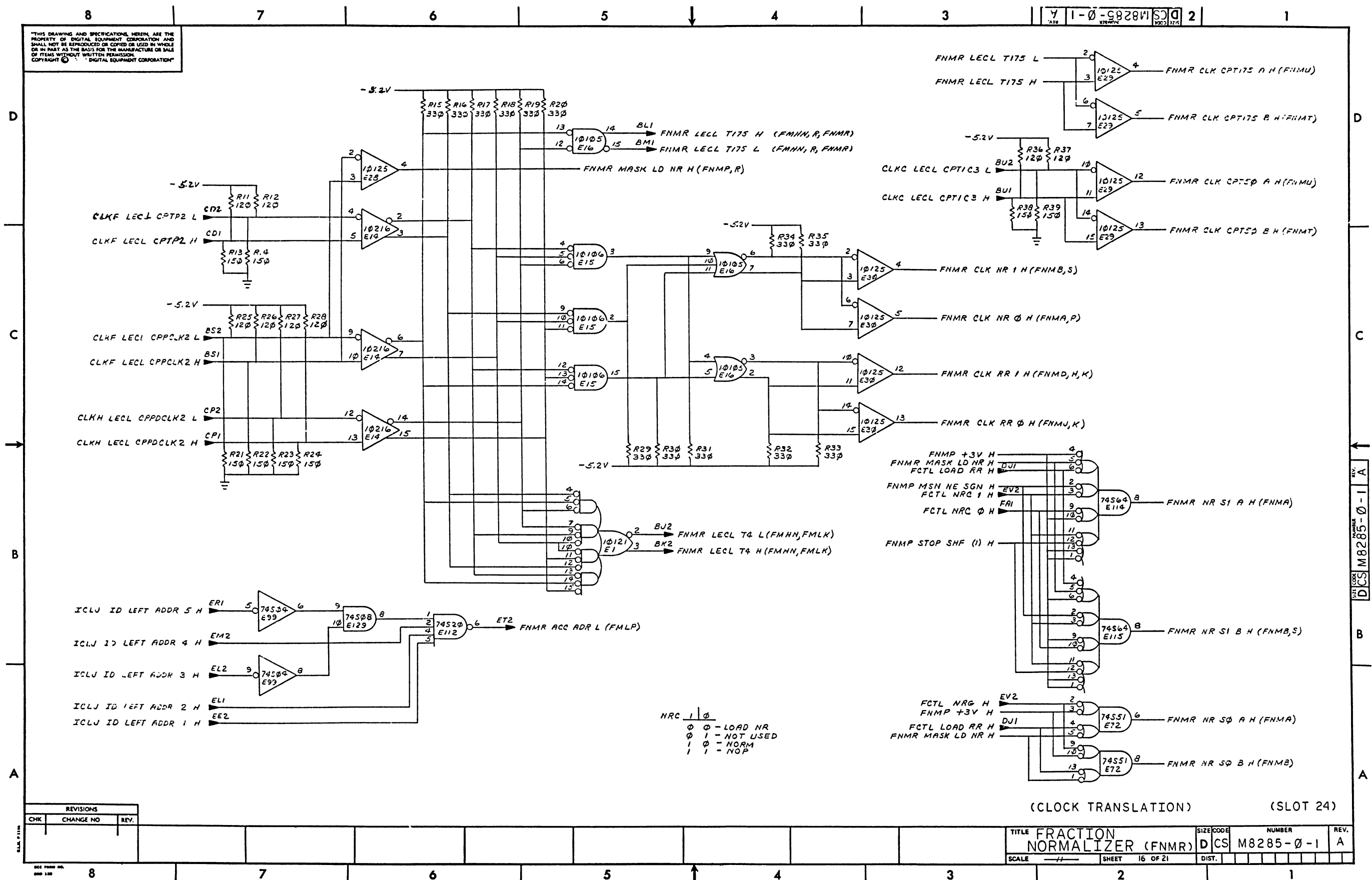


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REVISIONS		
CHK	CHANGE NO.	REV.

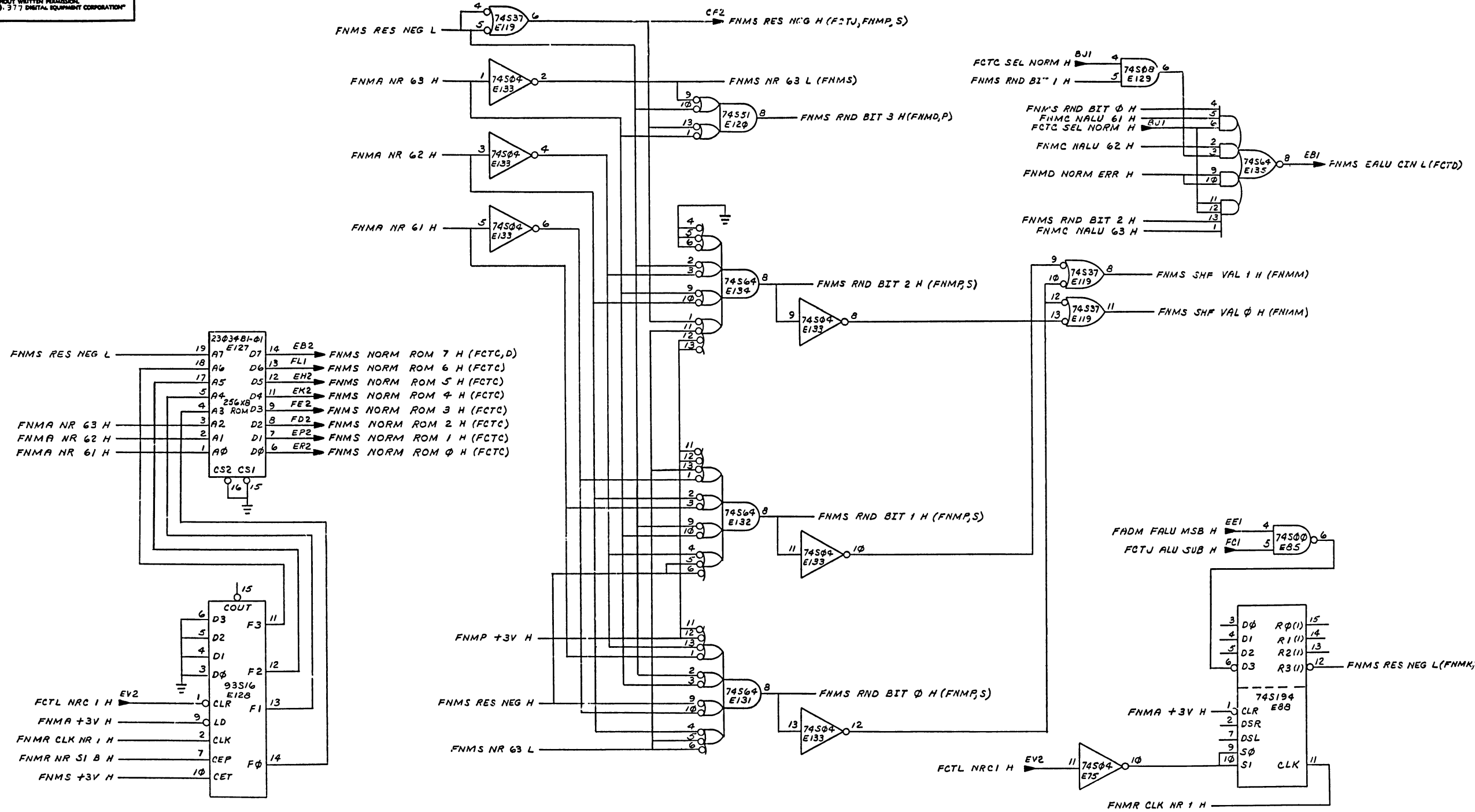
TITLE		SIZE	CODE	NUMBER	REV.
FRACTION NORMALIZER (FNMP)		D	CS	M8285-0-1	A
SCALE		SHEET		15 OF 21	DIST.

(SLOT 24)



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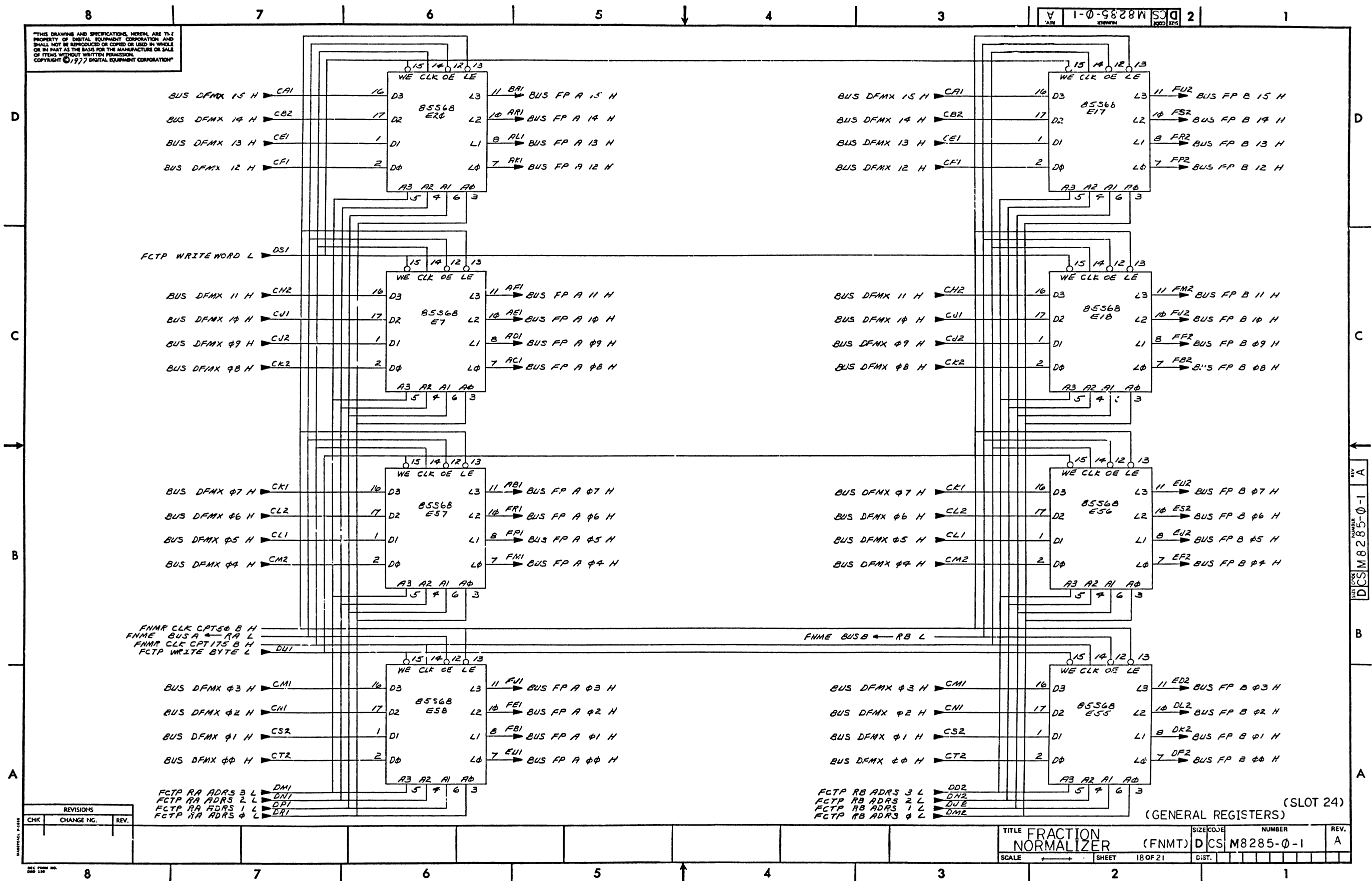
1-0-9828W SC 2

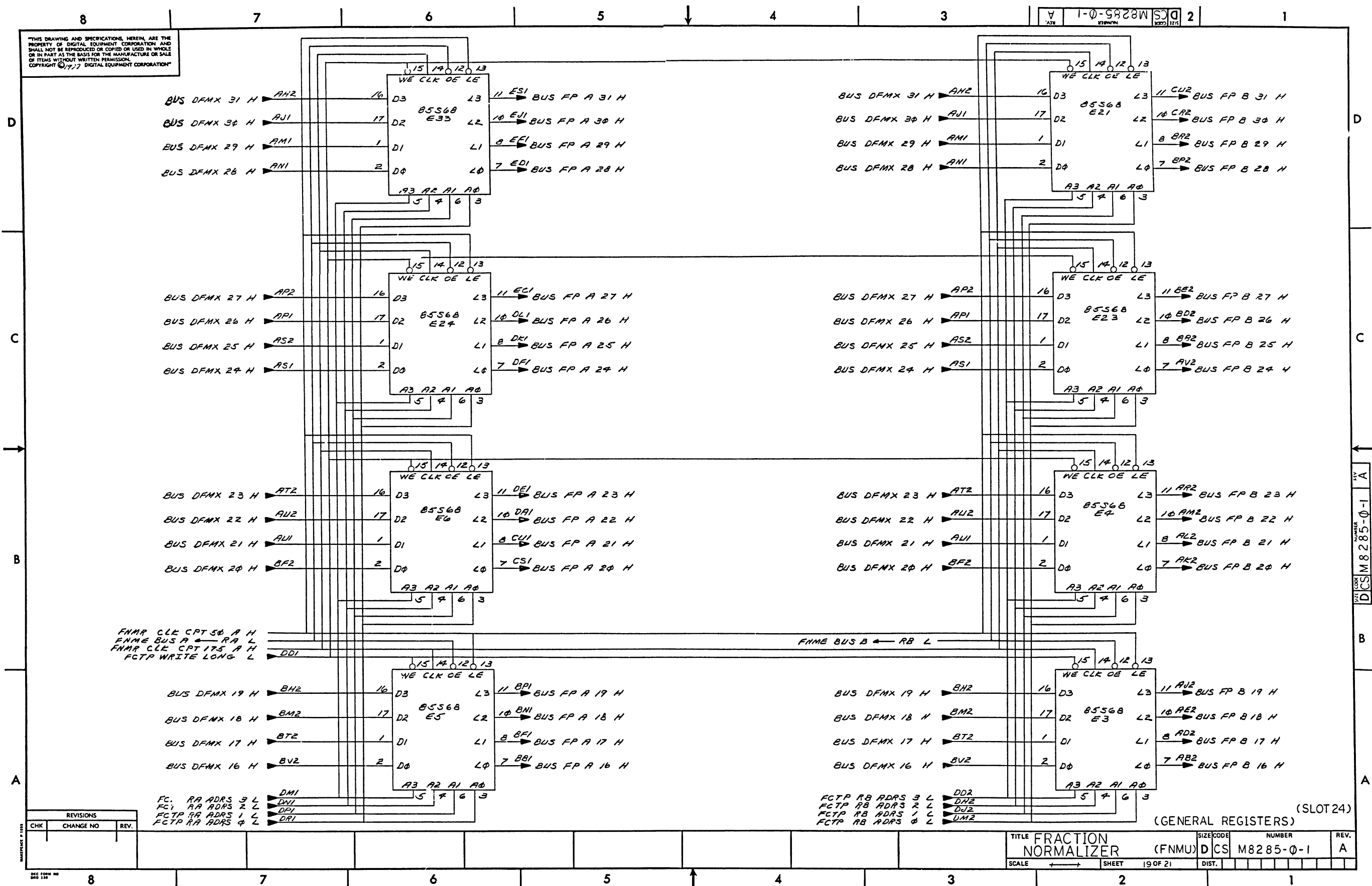


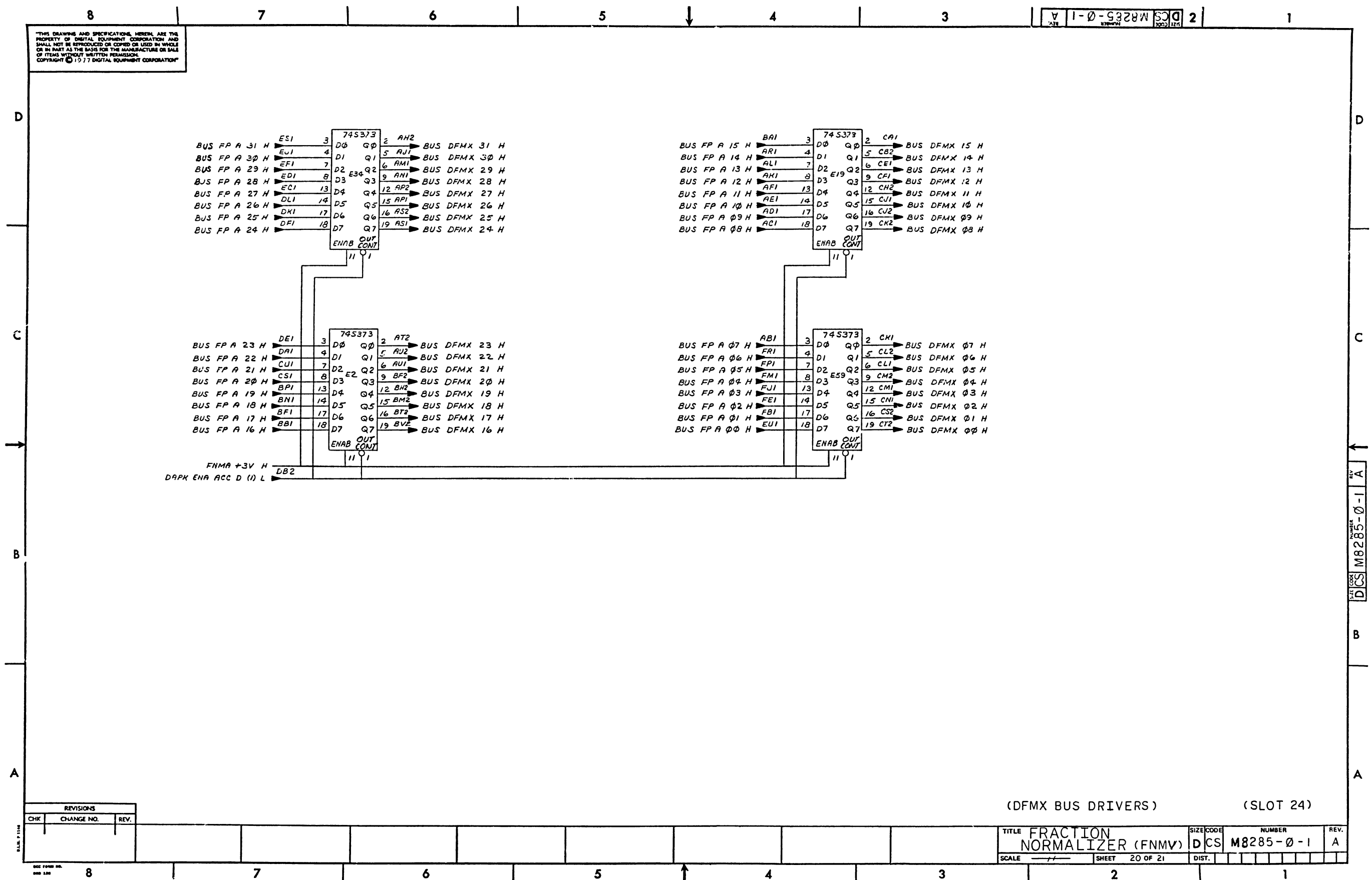
DIGITAL EQUIPMENT CORPORATION
M8285-0-1 A

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE		SIZE CODE	NUMBER	REV.
FRACTION NORMALIZER (FNMS)		D CS	M8285-0-1	A
SCALE	SHEET	DIST.		
11	17 OF 21			







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<u>NORMALIZATION</u>	<u>ROM</u>	<u>CONSTANTS</u>
----------------------	------------	------------------

PROM ADDR	PROM DATA							
	M	M	M	M	M	M	M	M
00	L	L	L	L	L	L	L	L
01	L	L	L	L	L	L	L	L
02	L	L	L	L	L	L	L	L
03	L	L	L	L	L	L	L	L
04	L	L	L	L	L	L	L	L
05	L	L	L	L	L	L	L	L
06	H	H	H	H	H	H	H	H
07	H	H	H	H	H	H	L	H
08	H	H	H	H	H	L	L	H
09	H	H	H	H	H	L	L	H
0A	H	H	H	H	H	L	L	H
0B	H	H	H	H	H	L	L	H
0C	H	H	H	H	H	L	L	L
0D	H	H	H	H	H	L	L	L
0E	H	H	H	H	H	L	L	H
0F	H	H	H	H	H	L	L	L
10	H	H	H	H	H	L	L	H
11	H	H	H	H	H	L	L	H
12	H	H	H	H	H	L	L	H
13	H	H	H	H	H	L	L	H
14	H	H	H	H	H	L	L	L
15	H	H	H	H	H	L	L	L
16	H	H	H	H	L	H	H	H
17	H	H	H	H	L	H	L	L
18	H	H	H	H	L	H	L	H
19	H	H	H	H	L	H	L	H
1A	H	H	H	H	L	H	L	H
1B	H	H	H	H	L	H	L	L
1C	H	H	H	H	L	H	L	L
1D	H	H	H	H	L	H	L	L
1E	H	H	H	H	L	H	L	L
1F	H	H	H	H	L	L	L	L
20	H	H	H	H	L	L	L	L
21	H	H	H	H	L	L	L	L
22	H	H	H	H	L	L	L	L
23	H	H	H	H	L	L	L	L
24	H	H	H	H	L	L	L	L
25	H	H	H	H	L	L	L	L
26	H	H	H	H	L	H	H	L
27	H	H	H	L	H	H	L	L
28	H	H	H	L	H	H	L	L
29	H	H	H	L	H	L	L	L
2A	H	H	H	L	H	L	L	L

		PROM DATA							
PROM ADDR	M	M	M	M	M	M	M	M	M
2B	H	H	H	H	L	H	H	L	L
2C	H	H	H	H	L	H	H	L	L
2D	H	H	H	H	L	H	H	L	L
2E	H	H	H	H	L	H	H	L	L
2F	H	H	H	H	L	H	H	L	L
30	H	H	H	H	L	H	L	L	H
31	H	H	H	H	L	H	L	L	H
32	H	H	H	H	L	H	L	L	H
33	H	H	H	H	L	H	L	L	H
34	H	H	H	H	L	H	L	L	L
35	H	H	H	H	L	L	H	L	L
36	H	H	H	H	L	L	H	H	H
37	H	H	H	H	L	L	H	H	L
38	H	H	H	H	L	L	H	L	H
39	H	H	H	H	L	L	H	L	H
3A	H	H	H	H	L	L	H	L	H
3B	H	H	H	H	L	L	H	L	L
3C	H	H	H	H	L	L	H	L	L
3D	H	H	H	H	L	L	H	L	L
3E	H	H	H	H	L	L	H	L	H
40	H	H	H	H	L	L	L	H	L
4F	H	H	H	H	L	L	L	L	H
41	H	H	H	H	L	L	L	L	H
42	H	H	H	H	L	L	L	L	H
43	H	H	H	H	L	L	L	L	H
44	H	H	H	H	L	L	L	L	L
45	H	H	H	H	L	L	L	L	L
46	H	H	H	L	H	H	H	H	L
47	H	H	L	H	H	H	H	H	L
48	H	H	L	H	H	H	H	L	H
49	H	H	L	H	H	H	H	L	H
4A	H	H	L	H	H	H	H	L	H
4B	H	H	L	H	H	H	H	L	H
4C	H	H	L	H	H	H	H	L	L
4D	H	H	L	H	H	H	H	L	L
4E	H	H	L	H	H	H	L	H	H
4F	H	H	L	H	H	L	H	L	L
50	H	H	L	H	H	L	L	L	H
51	H	H	L	H	H	L	L	L	H
52	H	H	L	H	H	L	L	L	H
53	H	H	L	H	H	L	L	L	H
54	H	H	L	H	H	L	L	L	L
55	H	H	L	H	H	L	L	L	L

PROM ADDR	PROM DATA							
	M7	M6	M5	M4	M3	M2	M1	M0
56	H	H	L	H	L	H	H	L
57	H	H	L	H	L	H	H	L
58	H	H	L	H	L	H	L	H
59	H	H	L	H	L	H	L	H
5A	H	H	L	H	L	H	L	H
5B	H	H	L	H	L	H	L	H
5C	H	H	L	H	L	H	L	H
5D	H	H	L	H	L	H	L	L
5E	H	H	L	H	L	L	H	H
5F	H	H	L	H	L	H	L	H
60	H	H	L	H	L	L	L	H
61	H	H	L	H	L	L	L	H
62	H	H	L	H	L	L	L	H
63	H	H	L	H	L	L	L	H
64	H	H	L	H	L	L	L	L
65	H	H	L	H	L	L	L	L
66	H	H	L	L	H	H	H	H
67	H	H	L	L	H	H	H	L
68	H	H	L	L	H	H	L	H
69	H	H	L	L	H	H	L	H
6A	H	H	L	L	H	H	L	H
6B	H	H	L	L	H	H	L	H
6C	H	H	L	L	H	H	L	L
6D	H	H	L	L	H	H	L	L
6E	H	H	L	L	H	L	H	H
6F	H	H	L	L	H	L	H	L
70	H	H	L	L	H	L	L	H
71	H	H	L	L	H	L	L	H
72	H	H	L	L	H	L	L	H
73	H	H	L	L	H	L	L	H
74	H	H	L	L	H	L	L	L
75	H	H	L	L	H	L	L	L
76	H	H	L	L	L	H	H	H
77	H	H	L	L	L	H	H	L
78	H	H	L	L	L	H	L	H
79	H	H	L	L	L	H	L	H
7A	H	H	L	L	L	H	L	H
7B	H	H	L	L	L	H	L	L
7C	H	H	L	L	L	H	L	L
7D	H	H	L	L	L	H	L	L
7E	H	H	L	L	L	L	H	H
7F	H	H	L	L	L	L	H	L
80	H	H	H	H	H	H	H	L


[illegible]

PROM ADDR	PROM DATA							
	M7	M6	M5	M4	M3	M2	M1	M0
AC	H	H	H	L	H	H	L	H
AD	H	H	H	L	H	H	L	H
AE	H	H	H	L	H	H	L	H
AF	H	H	H	L	H	H	L	H
B0	H	H	H	L	L	H	H	L
B1	H	H	H	L	L	H	H	L
B2	H	H	H	L	L	L	L	L
B3	H	H	H	L	L	L	L	L
B4	H	H	H	L	L	L	L	H
B5	H	H	H	L	L	L	L	H
B6	H	H	H	L	L	L	L	H
B7	H	H	H	L	L	L	L	H
B8	H	H	H	L	L	L	H	L
B9	H	H	H	L	L	L	H	H
BA	H	H	H	L	L	H	L	L
BB	H	H	H	L	L	H	L	L
BC	H	H	H	L	L	H	L	L
BD	H	H	H	L	L	H	L	H
BE	H	H	H	L	L	H	L	H
BF	H	H	H	L	L	H	L	H
C0	H	H	L	L	H	H	H	L
C1	H	H	L	L	H	H	H	H
C2	H	H	H	L	L	L	L	L
C3	H	H	H	L	L	L	L	L
C4	H	H	H	L	L	L	L	H
C5	H	H	H	L	L	L	L	H
C6	H	H	H	L	L	L	L	H
C7	H	H	H	L	L	L	L	H
C8	H	H	L	H	L	L	H	L
C9	H	H	L	H	H	L	H	H
CA	H	H	L	H	H	H	L	L
CB	H	H	L	H	H	H	L	L
CC	H	H	L	H	H	H	L	H
CD	H	H	L	H	H	H	L	H
CE	H	H	L	H	H	H	L	H
CF	H	H	L	H	H	H	L	H
D0	H	H	L	H	L	H	H	L
D1	H	H	L	H	L	H	H	H
D2	H	H	L	H	L	L	L	L
D3	H	H	L	H	H	L	L	L
D4	H	H	L	H	H	L	L	H
D5	H	H	L	H	H	L	L	H
D6	H	H	L	H	H	L	L	H

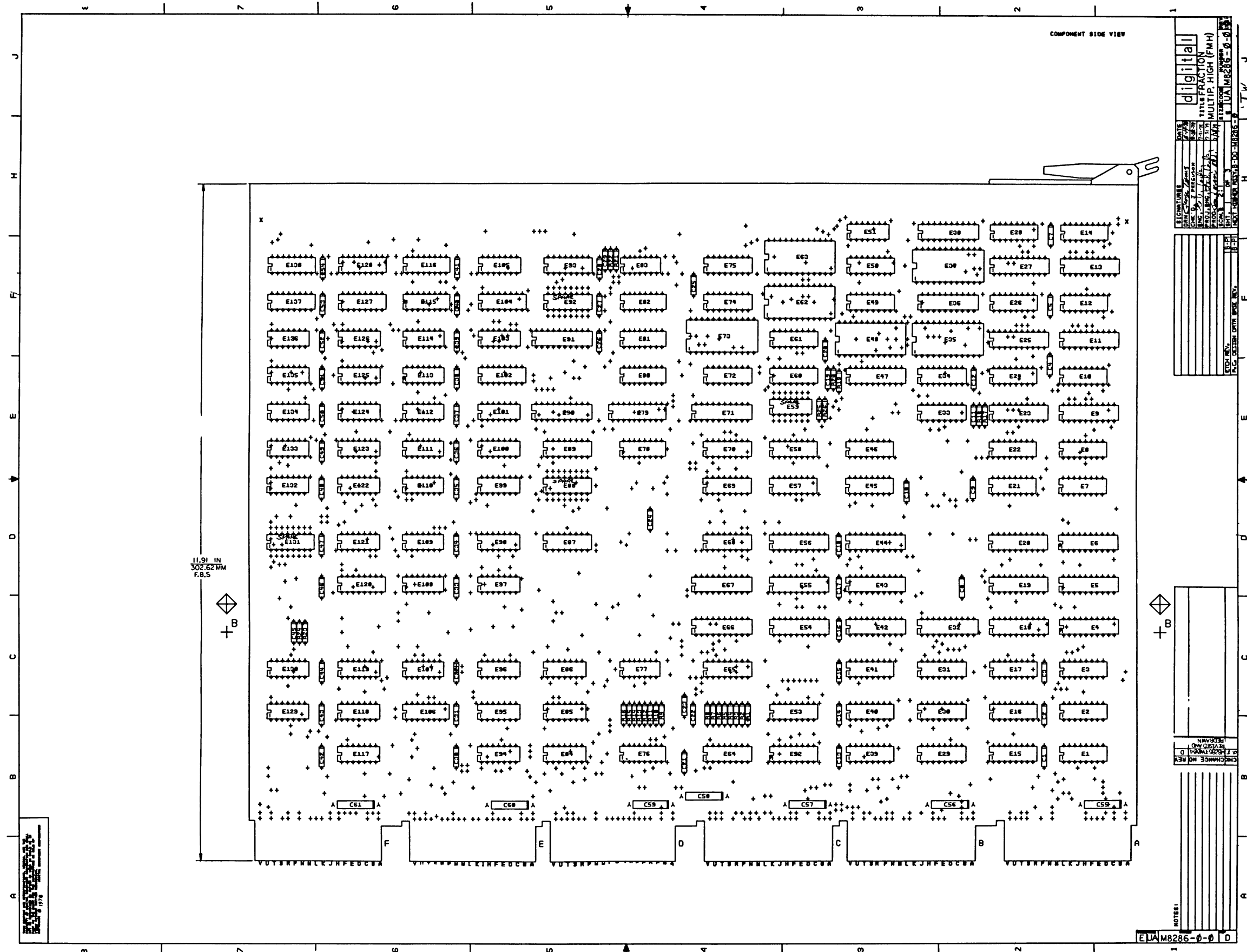
		PROM DATA							
PROM ADDR		M 7	M 6	M 5	M 4	M 3	M 2	M 1	M 0
D7	H	H	H	H	H	H	L	L	H
D6	H	H	L	L	H	L	L	H	L
D5	H	H	L	L	H	L	L	H	H
D4	H	H	L	L	H	L	H	L	L
D3	H	H	L	L	H	L	L	L	L
D2	H	H	L	L	H	L	H	L	H
D1	H	H	L	L	H	L	H	L	H
D0	H	H	L	L	H	L	H	L	H
DE	H	H	L	L	H	L	H	L	H
DF	H	H	L	L	H	L	H	L	H
EO	H	H	L	L	H	H	H	L	H
E1	H	H	L	L	H	H	H	H	H
E2	H	H	L	L	H	L	L	L	L
E3	H	H	L	L	H	L	L	L	L
E4	H	H	L	L	H	L	L	L	H
E5	H	H	L	L	H	L	L	L	H
E6	H	H	L	L	H	L	L	L	H
E7	H	H	L	L	H	L	L	L	H
E8	H	H	L	L	H	L	L	L	H
E9	H	H	L	L	H	L	L	L	H
EA	H	H	L	L	H	L	H	L	L
EB	H	H	L	L	H	L	H	L	L
EC	H	H	L	L	H	L	H	L	L
ED	H	H	L	L	H	L	H	L	L
EE	H	H	L	L	H	L	H	L	L
EF	H	H	L	L	H	L	H	L	L
F0	H	H	L	L	L	H	H	L	L
F1	H	H	L	L	L	H	H	L	L
F2	H	H	L	L	L	H	L	L	L
F3	H	H	L	L	L	H	L	L	L
F4	H	H	L	L	L	H	L	L	H
F5	H	H	L	L	L	H	L	L	H
F6	H	H	L	L	L	H	L	L	H
F7	H	H	L	L	L	L	L	L	H
F8	H	H	L	L	L	L	L	H	L
F9	H	H	L	L	L	L	L	H	H
FA	H	H	L	L	L	L	H	L	L
FB	H	H	L	L	L	L	H	L	L
FC	H	H	L	L	L	L	H	L	H
FD	H	H	L	L	L	L	H	L	H
FE	H	H	L	L	L	L	H	L	H
FF	H	H	L	L	L	L	H	L	H

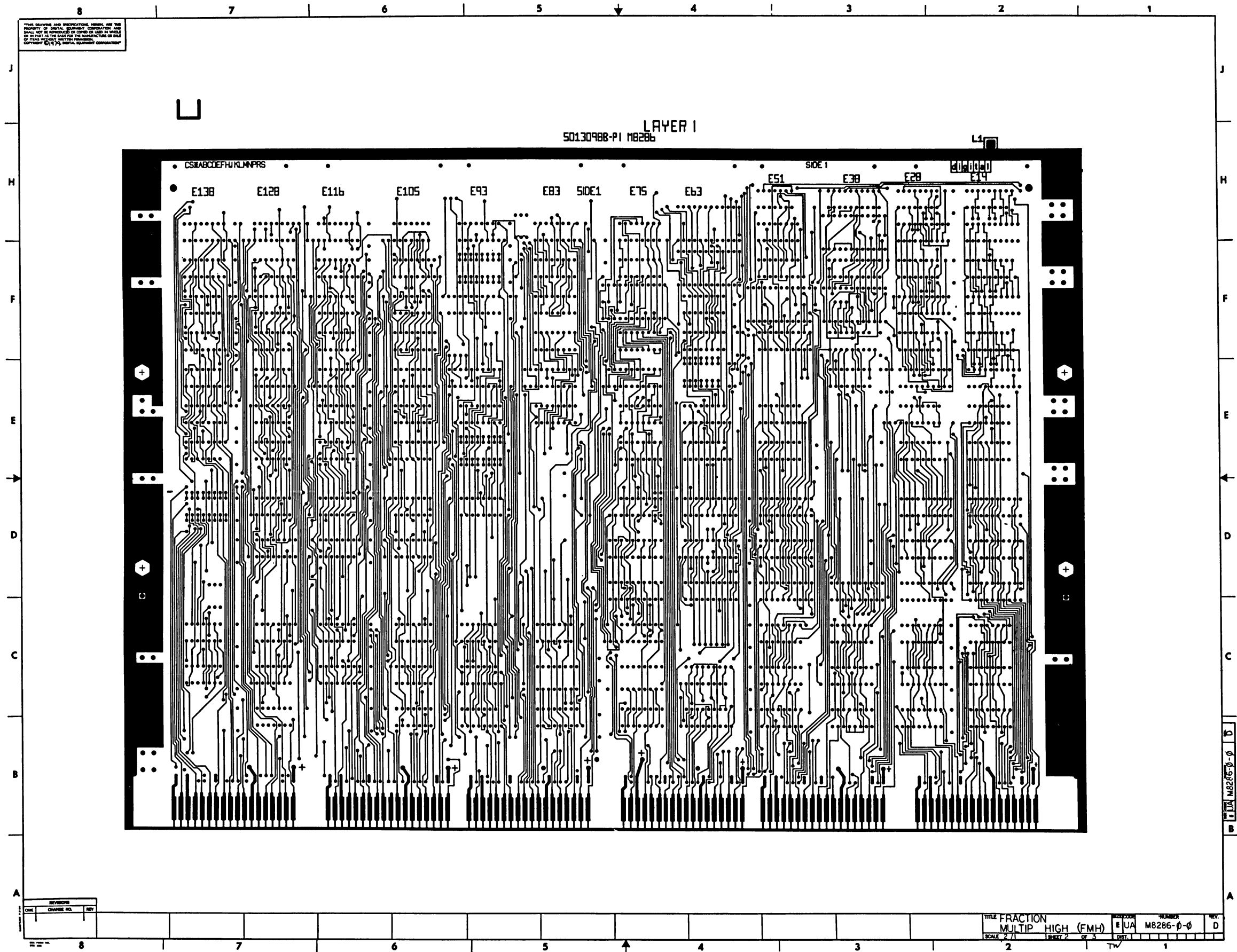
NORM ROM
CONSTANTS
(23-034BI-01)

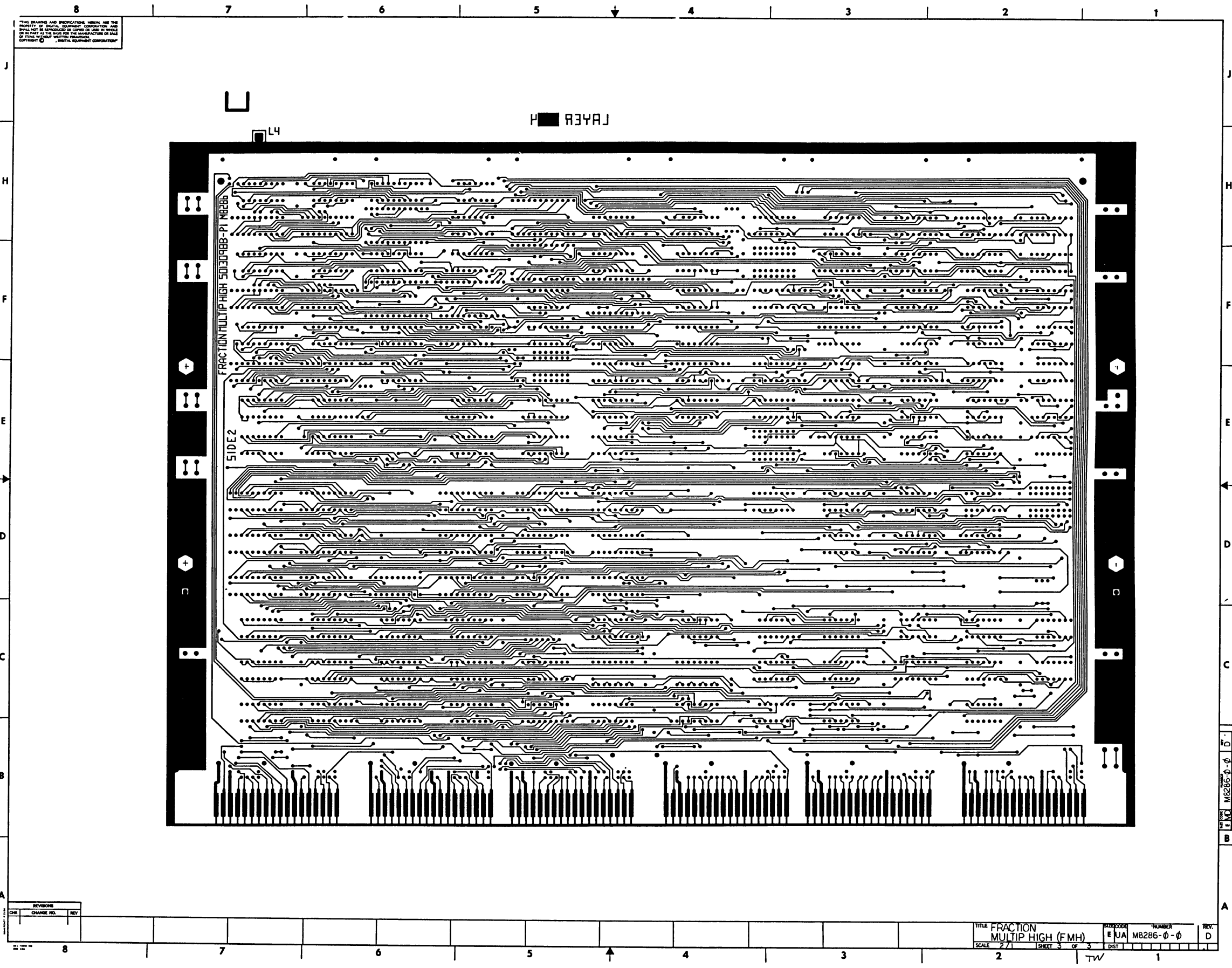
(SLOT 24)

DRN.		FIRST USED ON		digital	
CHK'D		TITLE FRACTION NORMALIZER (FNM)			
ENG.					
PROJ. ENG.					
PROD.					
NEXT HIGHER ASSY.					
F P 78 g					
SCALE 		SIZE D	CODE CS	NUMBER M8285-O-1	REV. A
SHEET 21	OF 21	DIST.			

[illegible]







LINE ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION	REFERENCE DESIGNATOR
1	1	D-MD-5013098-0-0	5013098-00	M8286	1
2	2		1012784-00	.047 MFD 50V -20+80 CER	53
3	3		1012084-01	8 MFD 25V G* 30D AL EL	7
4	4		1300250-00	150 1/4W 5% CC	4
5	5		1300247-00	120 1/4W 5% CC	4
6	6		1300295-00	330 1/4W 5% CC	4
7	7		1301890-00	560 1/4W 5% CC	4
8	8		1913788-00	26S10 TRANSCEIVER,BUS,QUA	4
9	9		1910552-00	74S194 SHIFT REG.,4BIT RIGH	20
10	10		1911641-00	SN 74S257 MUX,QUAD 2 TO 1	7
11	11		1913670-00	74S373 LATCH 8BIT TRASP TR	13
12	12		1910956-00	74S151 MUX 1 OF 8	10
13	13		23012B1-00	R1-01 OR CUSTOM MASKED ROM (74S2	6
14	14		1910531-00	DEC 74S181 ALU-4BIT	6
15	15		1910548-00	74S157 MUX 1 OF 2 (QUAD)	6
16	16		1913671-00	74S374 FF-D OCTAL TRISTATE	4
17	17		1912389-00	74S08 AND GATE-QUAD 2IN,PO	3
18	18		1911415-00	10125 ECL TO TTL TRNSLTR	2
19	19		1913493-00	74S241 OCTAL BUFFER,TRI-STA	2
20	20		1913700-00	74S381 ALU-4BIT	3
21	21		1912388-00	74S02 NOR GATE-QUAD 2IN,PO	5
22	22		1912097-00	SN 74S182 LOOK AND CARRY GEN	1
23	23		1910534-00	74S04 INVERTER GATE-HEX 1I	5
24	24		1910537-00	74S11 AND GATE-TRIPLE 3INP	2
25	25		1910957-00	74S175 FF-D QUAD COMMON CLO	5
26	26		1913294-00	93S16 COUNTER,SYNCH UP BIN	1

C1-C5,C7-C54
C55-C61
R2,R4,R10,R12
R1,R3,R9,R11
R5,R7,R13,R15
R20,R21,R24,R18
E1,E15,E29,E39
E2,E16,E30,E33,E34,E40,E49,E50,
E52,E53,E60,E61,E70,E72,E74,E75,
E78,E81,E82,E89
E3,E17,E31,E41,E65,E68,E69
E4,E5,E6,E19,E18,E20,E32,E42,
E43,E44,E54,E55,E56
E7,E8,E21,E22,E45,E46,E57,E58,
E104,E120
E9,E11,E13,E23,E25,E27
E35,E37,E48,E62,E63,E73
E10,E12,E14,E24,E26,E28
E36,E38,E47,E91
E51,E84,E117
E64,E76
E66,E67
E71,E79,E90
E77,E98,E107,E110,E118
E80
E83,E85,E101,E105,E119
E86,E96
E87,E115,E127,E137,E138
E93

REVISION HISTORY			BASIC PART NO: M8286			DRN: F SMART			DATE: 14-OCT-77			D I G I T A L		
ENG	ECO NUMBER	REV	SECTION A OF A			CHK'D: F SMART			DATE: 14-OCT-77			TITLE PARTS LIST		
---	INIT	*	SECTION VARIATION INDEX			CHK'D: F SMART			DATE: 14-OCT-77			FRACTION MULTIPLY HIGH		
WH	00001	D	[A] 00			DES,ENG: STAN LACKEY			DATE: 21-OCT-77			DOCUMENT NUMBER		
			[B]			RESP,ENG: STAN LACKEY			DATE: 21-OCT-77			SIZE CODE NUMBER REV		
			[C]			MFG,ENG: MIKE TERELLA			DATE: 21-OCT-77			K PL M8286-0-DBP D		
			[D]			ASSEMBLY NUMBER:			TOP DOCUMENT NUMBER:			FILE NAME:		
			[E]			D-UA-M8286-0-0			M8286			Z06300.PLS		
			[F]									EDIT #		
			[G]									12		
			[H]											
			[I]											
			[J]											
			[K]											
			[L]											
			[M]											
			[N]											

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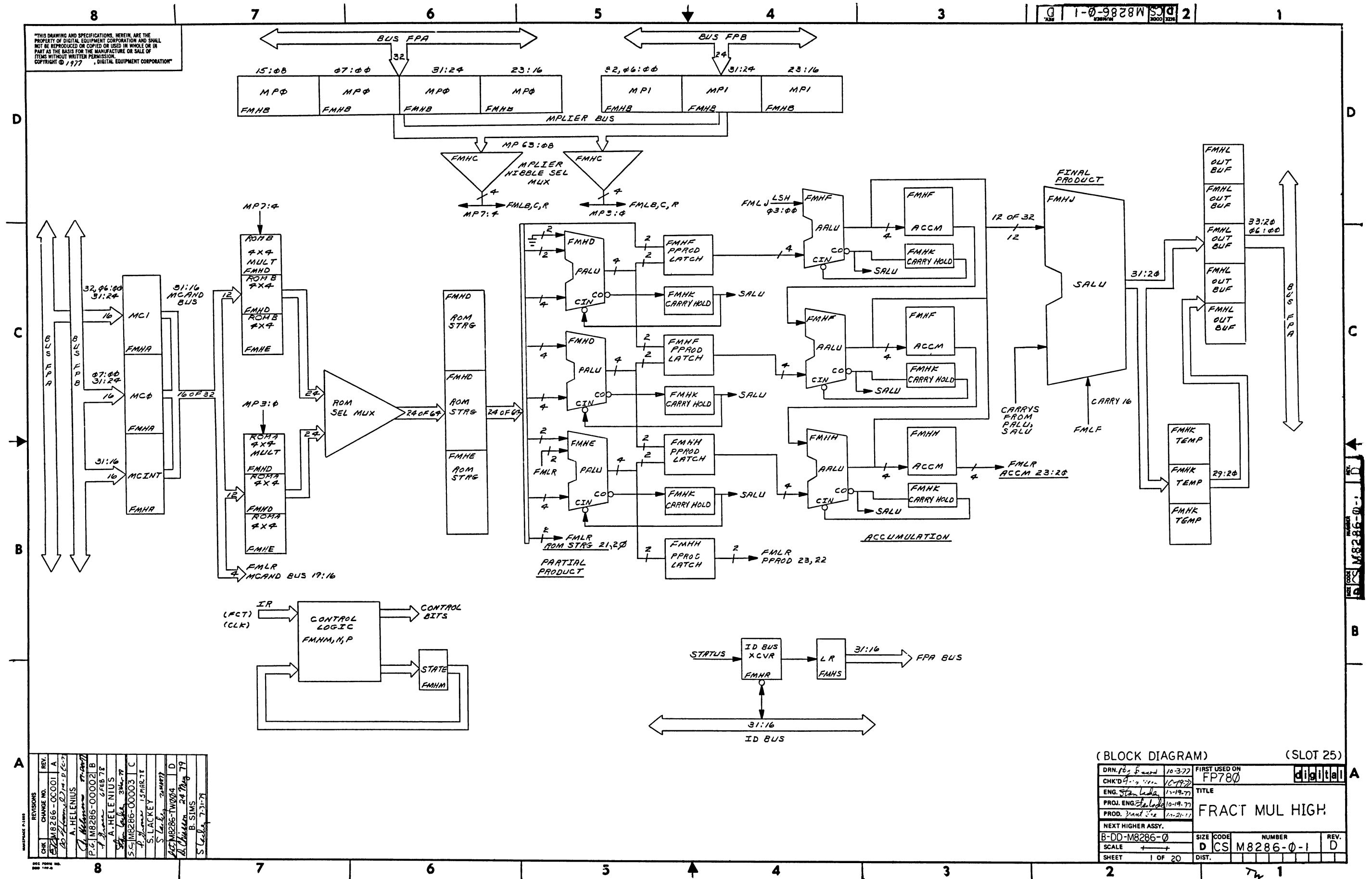
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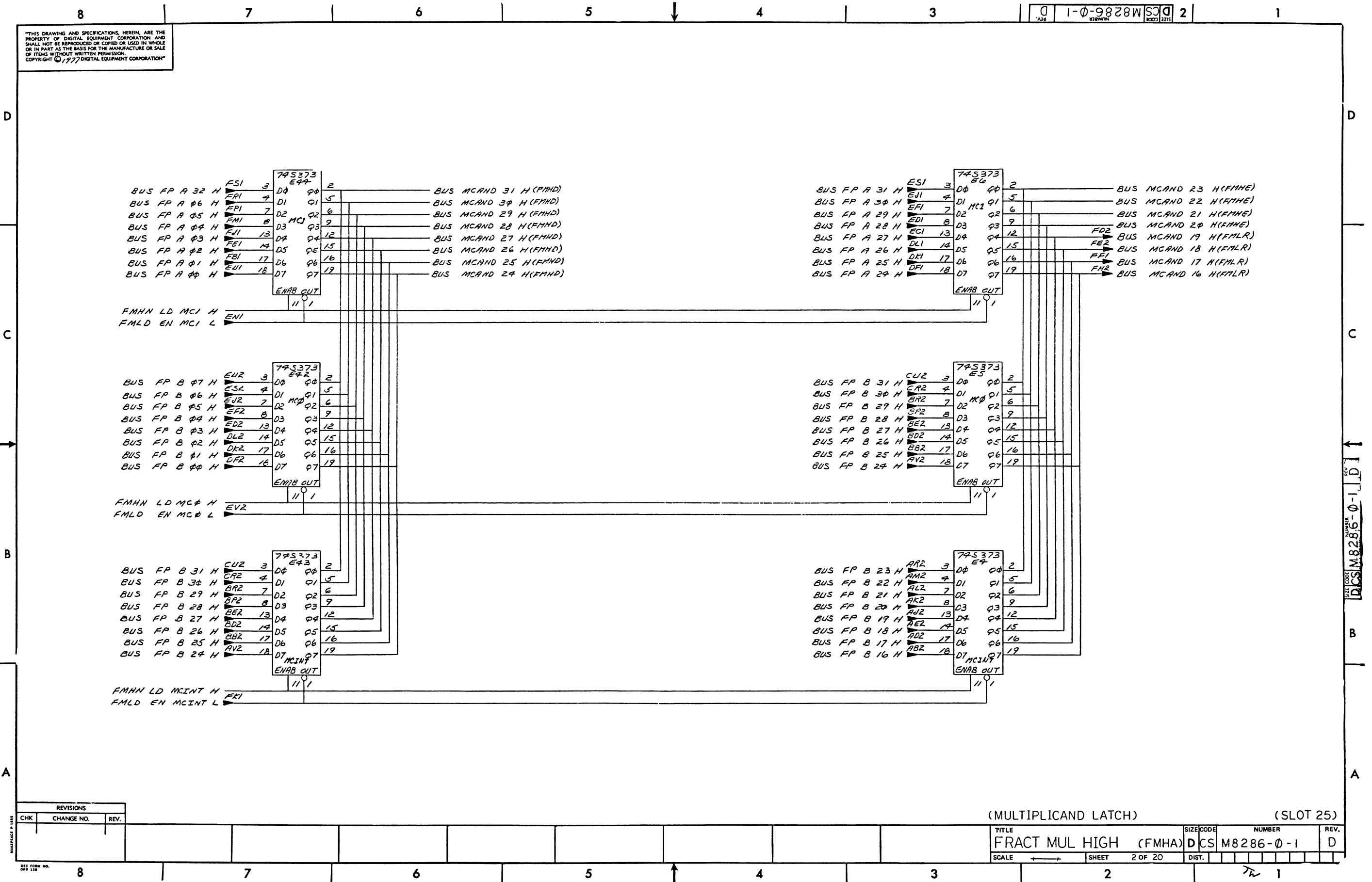
LINE ITEM		DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION 00	REFERENCE DESIGNATOR
27	27	BLANK	1910536-00	74S10 NAND GATE-TRIPLE 3IN	4	E94,E114,E124,E135
28	28		1910532-00	74S00 NAND GATE-QUAD 2INS	2	E95,E126
29	29		1910651-00	*** THIS ITEM IS NOT USED ***	-	
30	30		1910542-00	74S64 A-0-I GATE 4-2-3-2	9	
31	31		1912746-00	DEC 74S37 NAND GATE-QUAD 2IN	3	CONT E99,E100,E109,E112,E113,E122, E123,E129,E130
32	32		1910545-00	74S112 FF-JK DUAL,EDGE TRIG	1	E100,E132,E133
33	33		1910544-00	74S74 FF-D DUAL,EDGE TRIGG	1	E102
34	34		1910550-00	74S174 FF-D HEX	2	E103
35	35		1911712-00	74S51 AND-OR GATE-INVERT D	3	E106,E116
36	36		1910539-00	74S20 NAND GATE-DUAL 4INPU	2	E121,E111,E97
37	37		1911675-00	74S138 DECODER/DEMUX 3-8 LIN	1	E125,E136
38	38		1910541-00	74S40 NAND GATE-DUAL 4IN,B	1	E128
39	39		1210711-02	HANDLE,MODULE,HEX	1	E134
40	40		9000024-01	EYELET, ROLLED FLANGE, .121 OD X	12	
41	41		1301972-00	270 1/4W 5% CC	8	R6,R8,R14,R16,R19,R22,R23,R17
42	42		1300309-00	390 1/4W 5% CC	1	R25
43	43		1301424-00	680 1/4W 5% CC	1	R26

0 NOTE: IC SPARE LOCATIONS ARE E59,E131,E88,E92

D	I	G	I	T	A	L	TITLE	FRACTION MULTIPLY HIGH	SECTION A OF A	SIZE	CODE	DOCUMENT NUMBER	REV.
										K	PL	M8286-0-D8P	D

TW

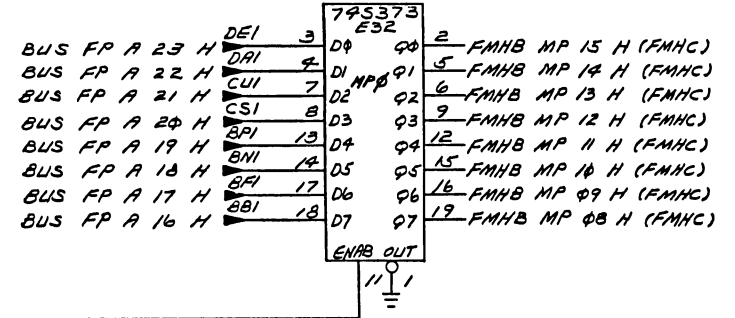
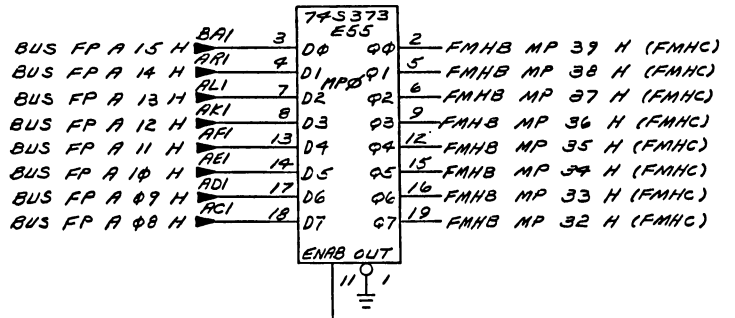
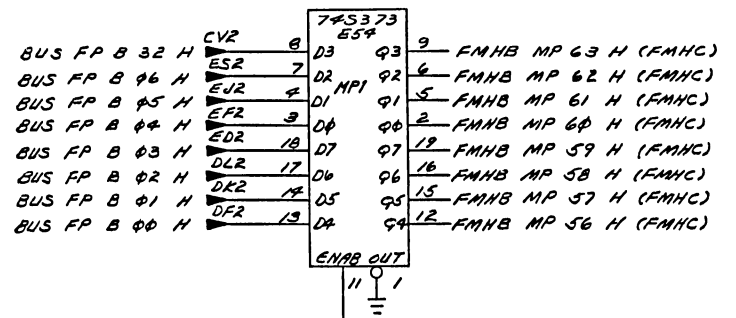




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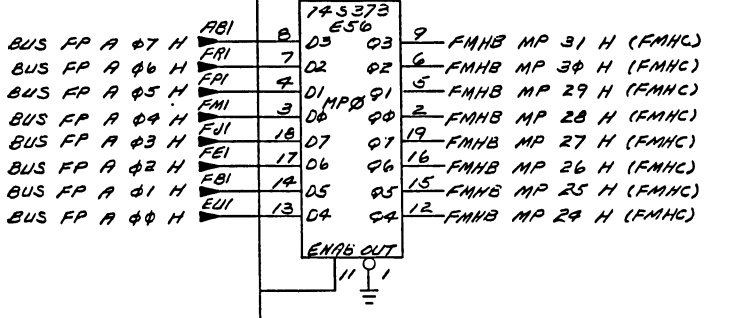
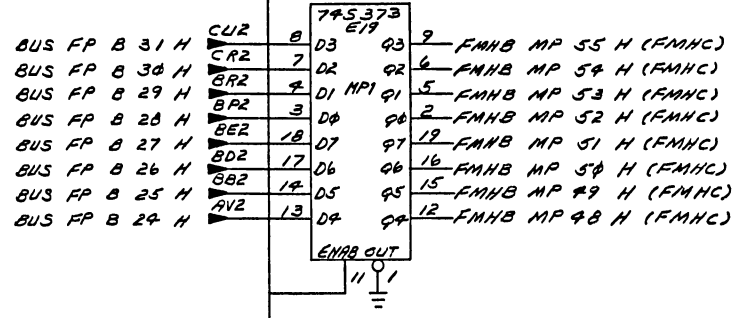
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D



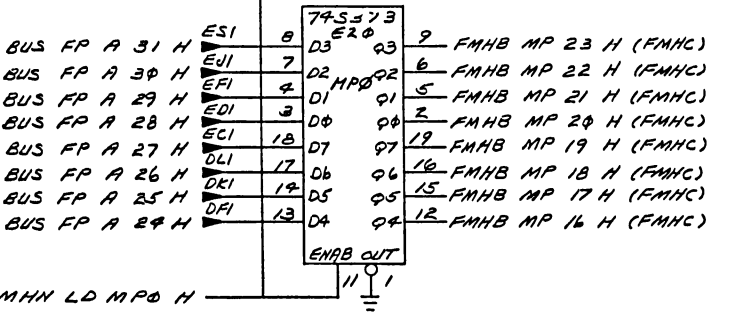
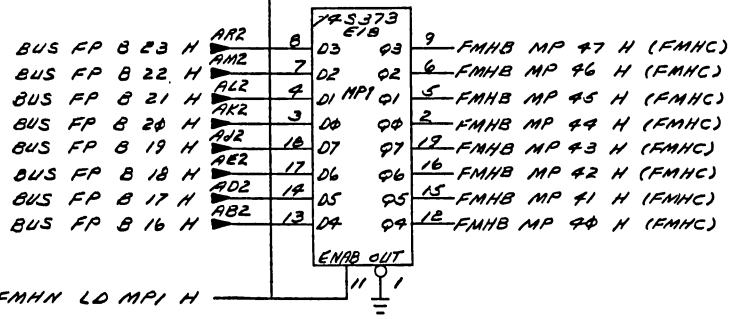
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C



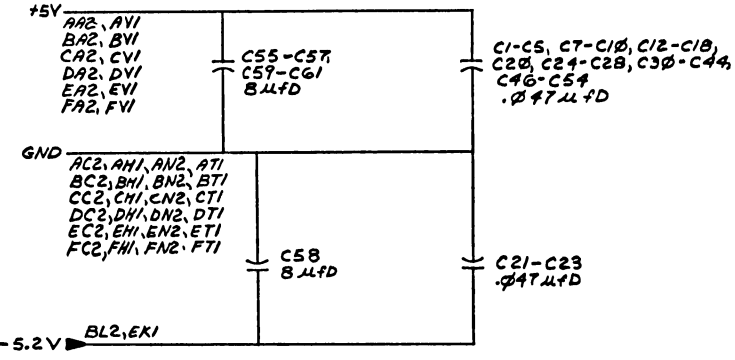
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B



A

A



REVISIONS		
CHK	CHANGE NO.	REV.

DEC FORM NO. 100 100

(MPLIER LATCH)

(SLOT 25)

TITLE		SIZE/CODE	NUMBER	REV.
FRACT MUL HIGH (FMHB)		D	CS M8286-0-1	D
SCALE	SHEET	3 OF 20	DIST.	

8

7

6

5

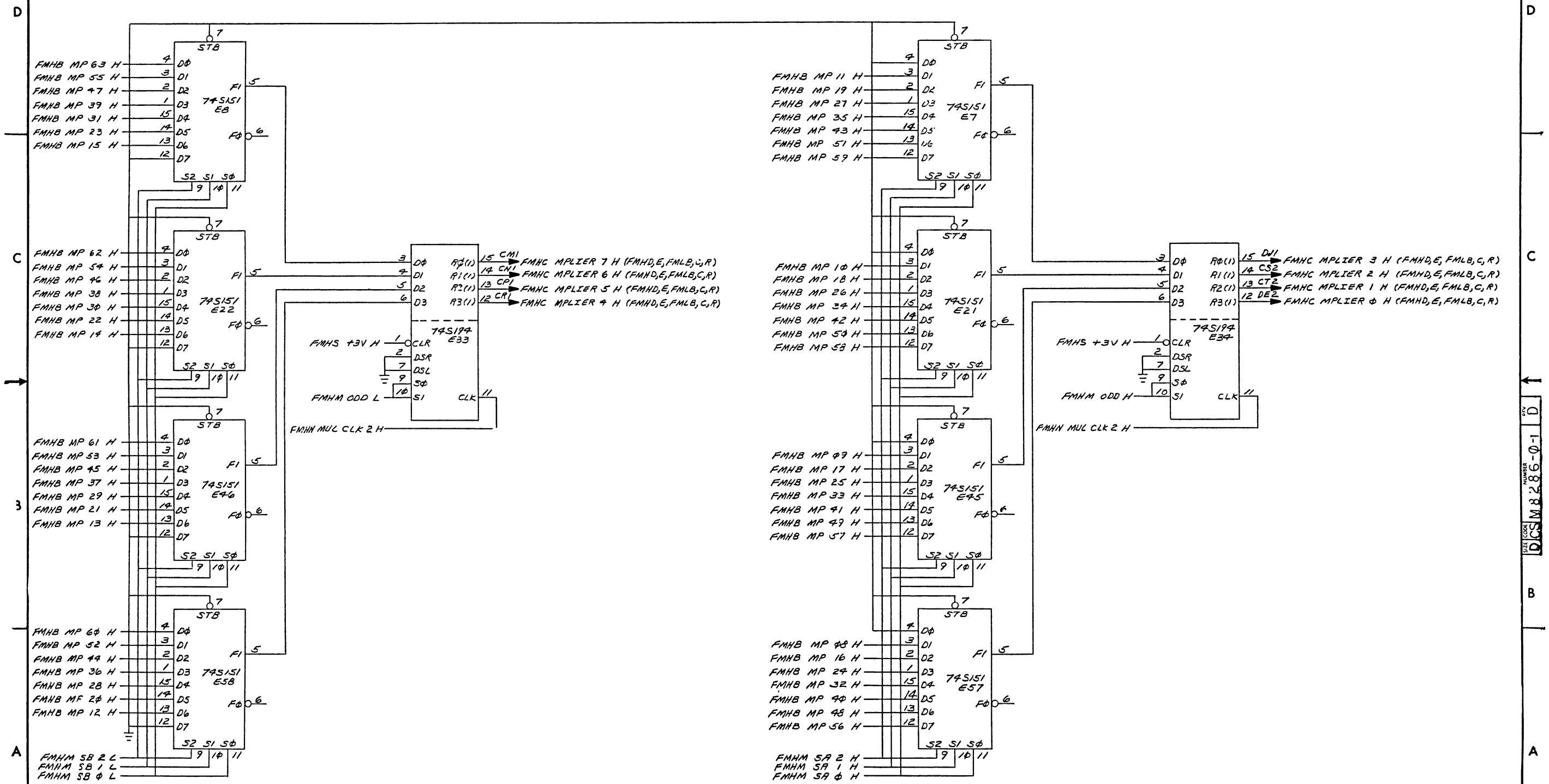
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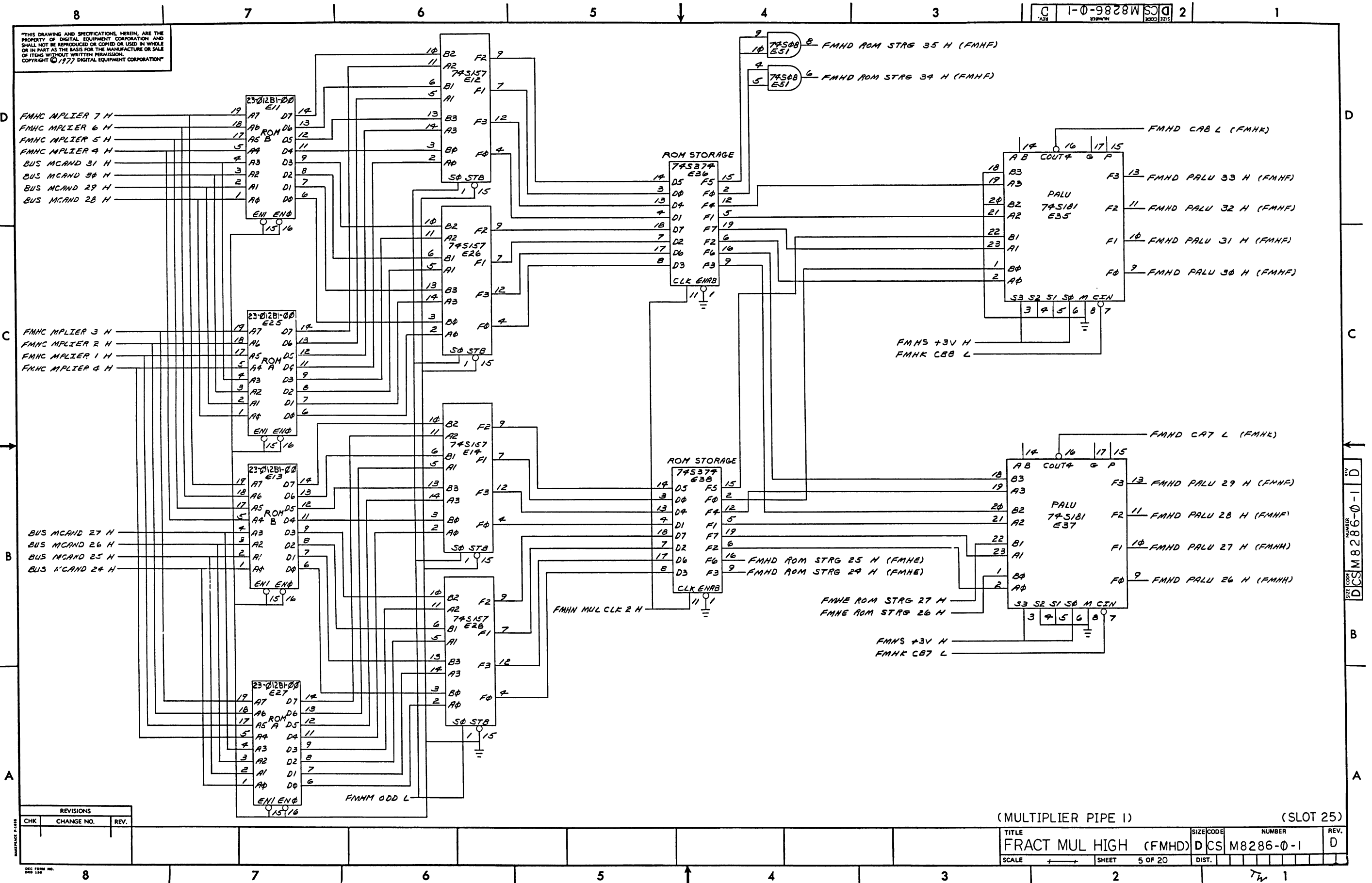
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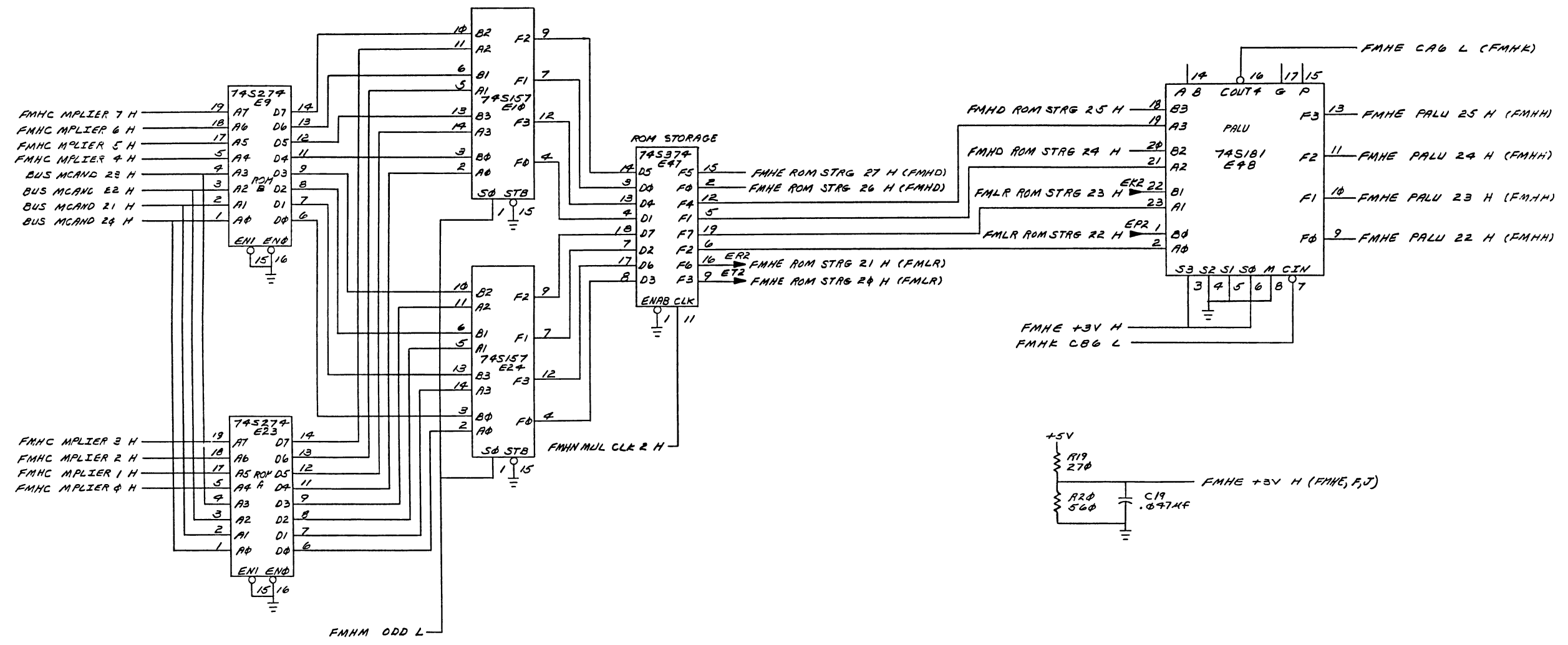
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(MULTIPLIER NIBBLE SELECT)				(SLOT 25)			
TITLE	SIZE CODE	NUMBER	REV.	TITLE	SIZE CODE	NUMBER	REV.
FRACT MUL HIGH (FMHC)	DCS	M8286-0-1	U	FRACT MUL HIGH (FMHC)	DCS	M8286-0-1	U
SCALE	SHEET	4 OF 20	DIST.	SCALE	SHEET	4 OF 20	DIST.



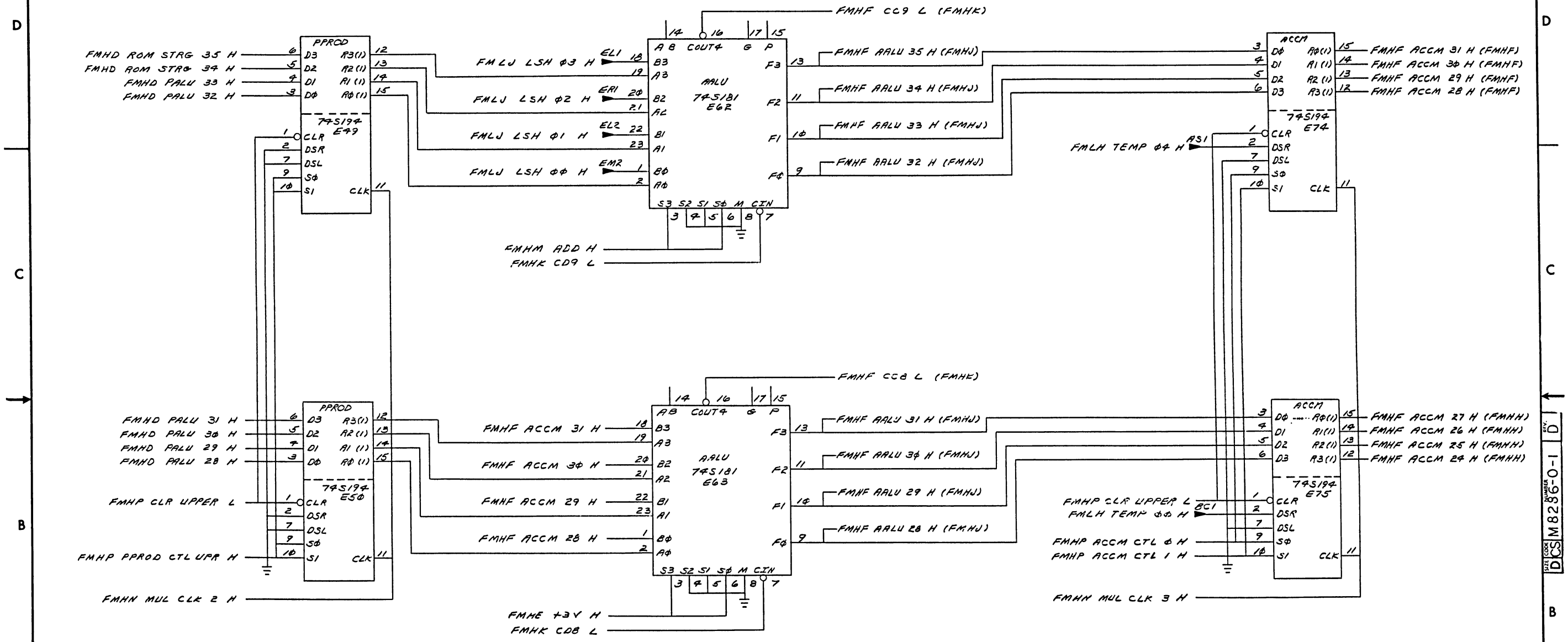
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REVISIONS		
CHK	CHANGE NO.	REV.

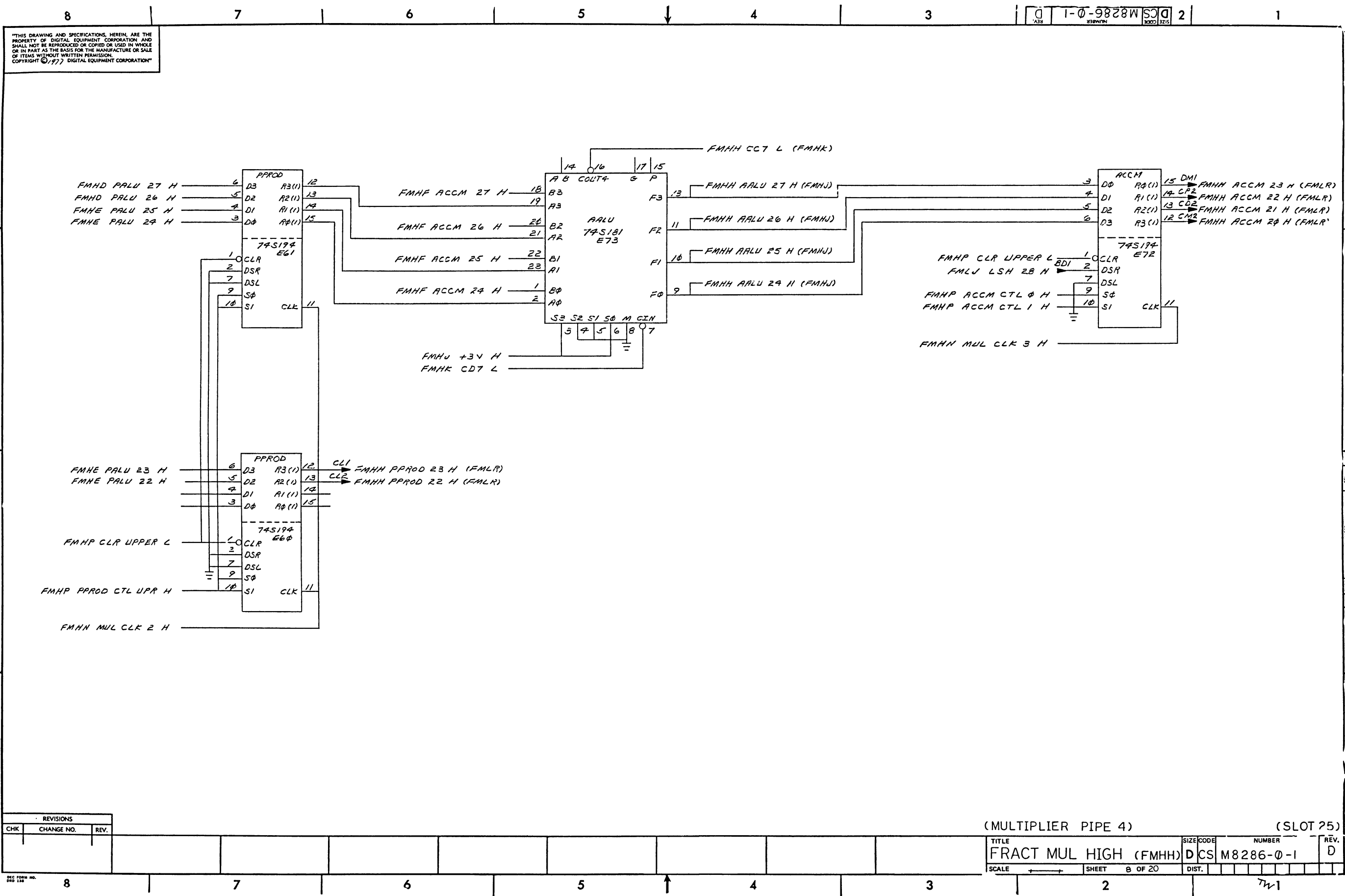
(MULTIPLIER PIPE 2)		(SLOT 25)	
TITLE	FRACT MUL HIGH (FMHE)	SIZE CODE	DCS
NUMBER	M8286-0-1	REV.	D
SCALE	6 OF 20	SHEET	1

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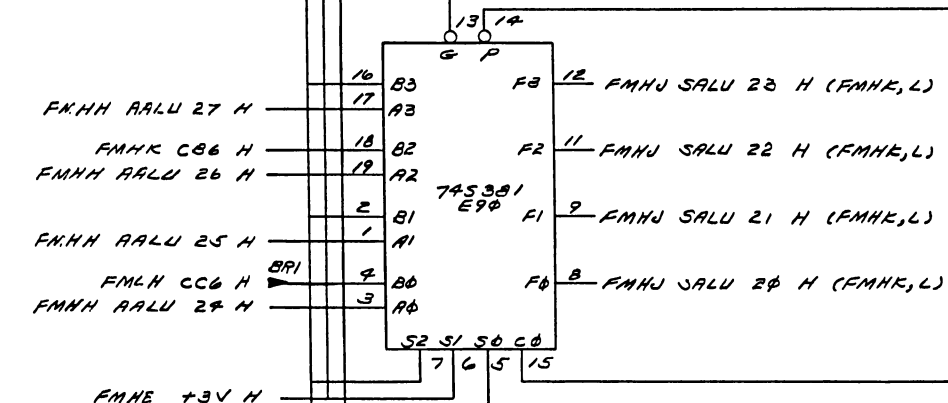
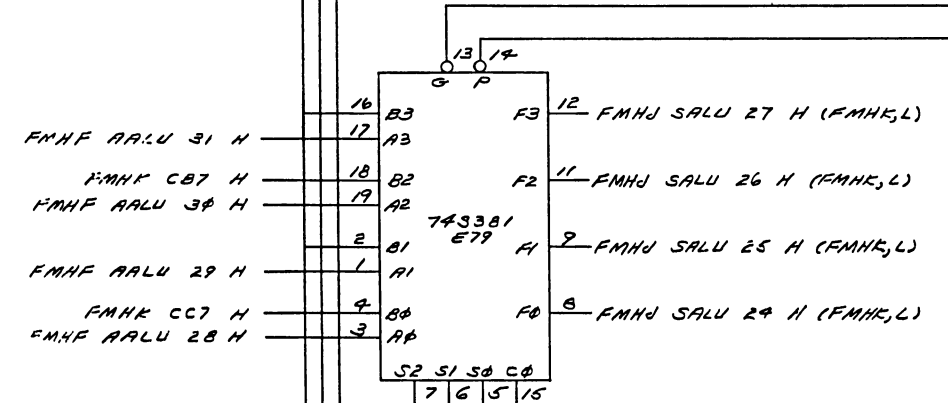
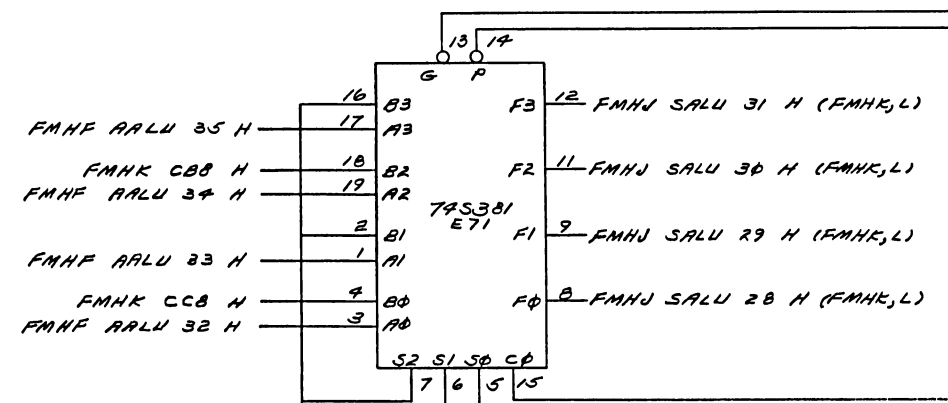


REVISIONS		
CHK	CHANGE NO.	REV.

(MULTIPLIER PIPE 3)		(SLOT 25)	
TITLE	FRAC TMUL HIGH (FMHF)	SIZE CODE	D CS
NUMBER	M8286-0-1	REV.	D
SCALE	+	SHEET	7 OF 20
DIST.			

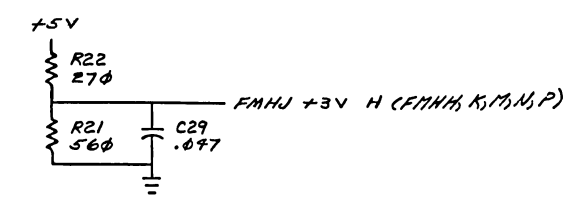
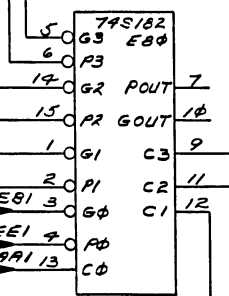


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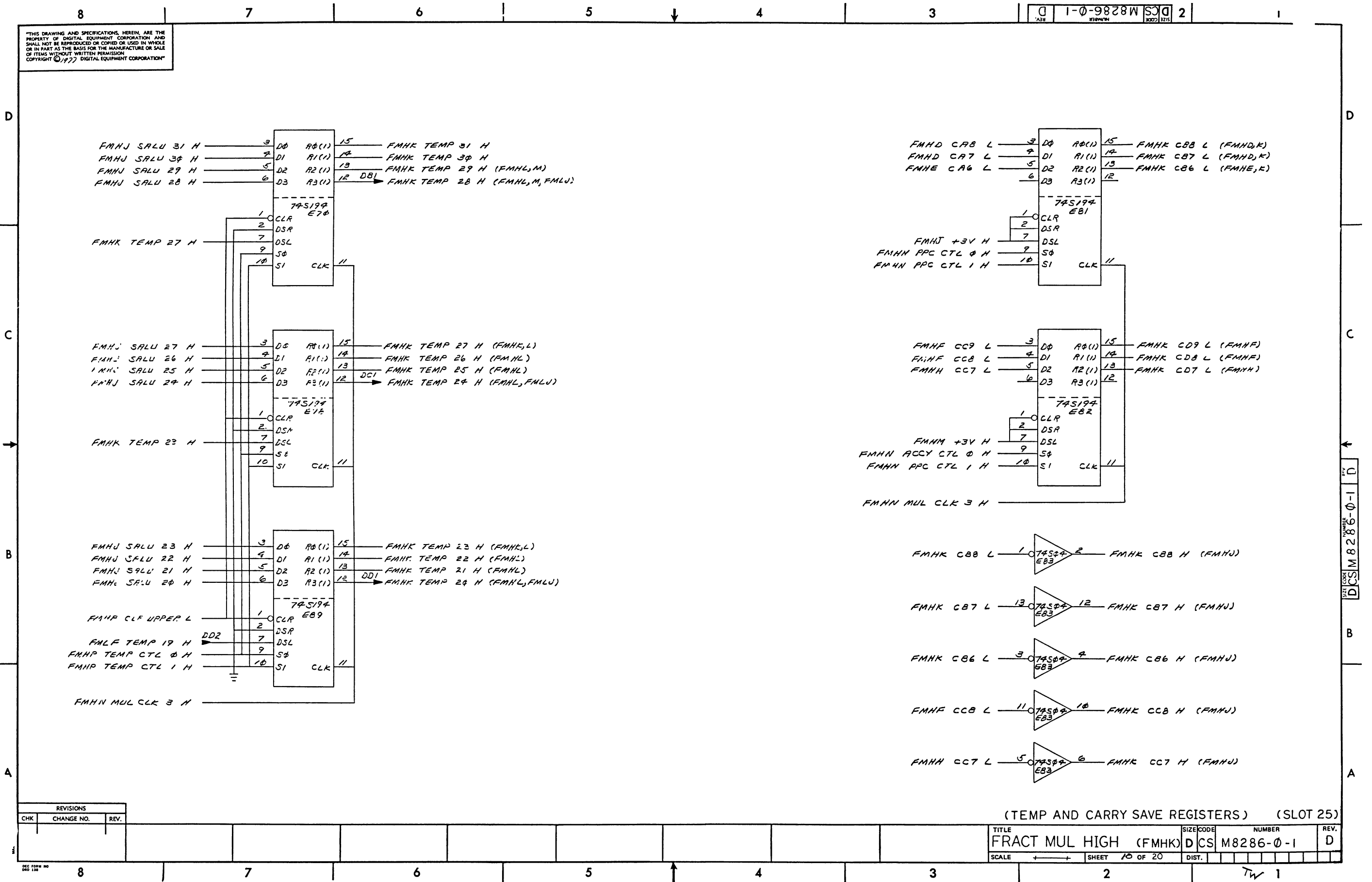
FMHE +3V H
FMHE +3V H

FMLF GEN 20 L
FMLF PROP 20 L
FMLF CARRY 16 H

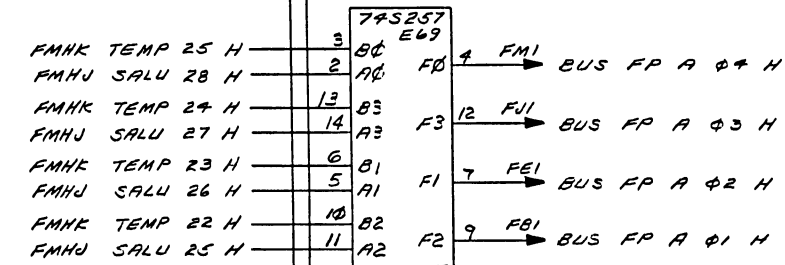
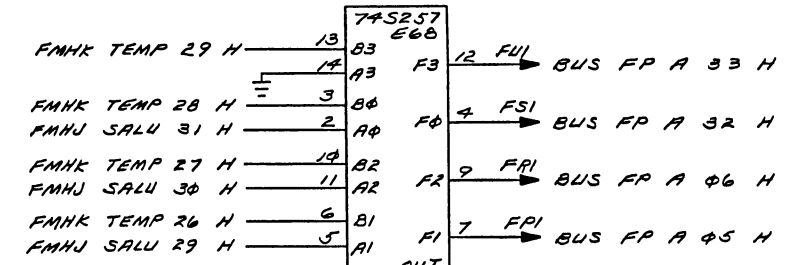


REVISIONS		
CHK	CHANGE NO.	REV.

(MOST SIGNIF HALF OF ADDER)				(SLOT 25)			
TITLE		SIZE CODE	NUMBER	REV.			
FRACT MUL HIGH (FMHJ)		DCS	M8286-0-1	D			
SCALE		SHEET	9 OF 20	DIST.			

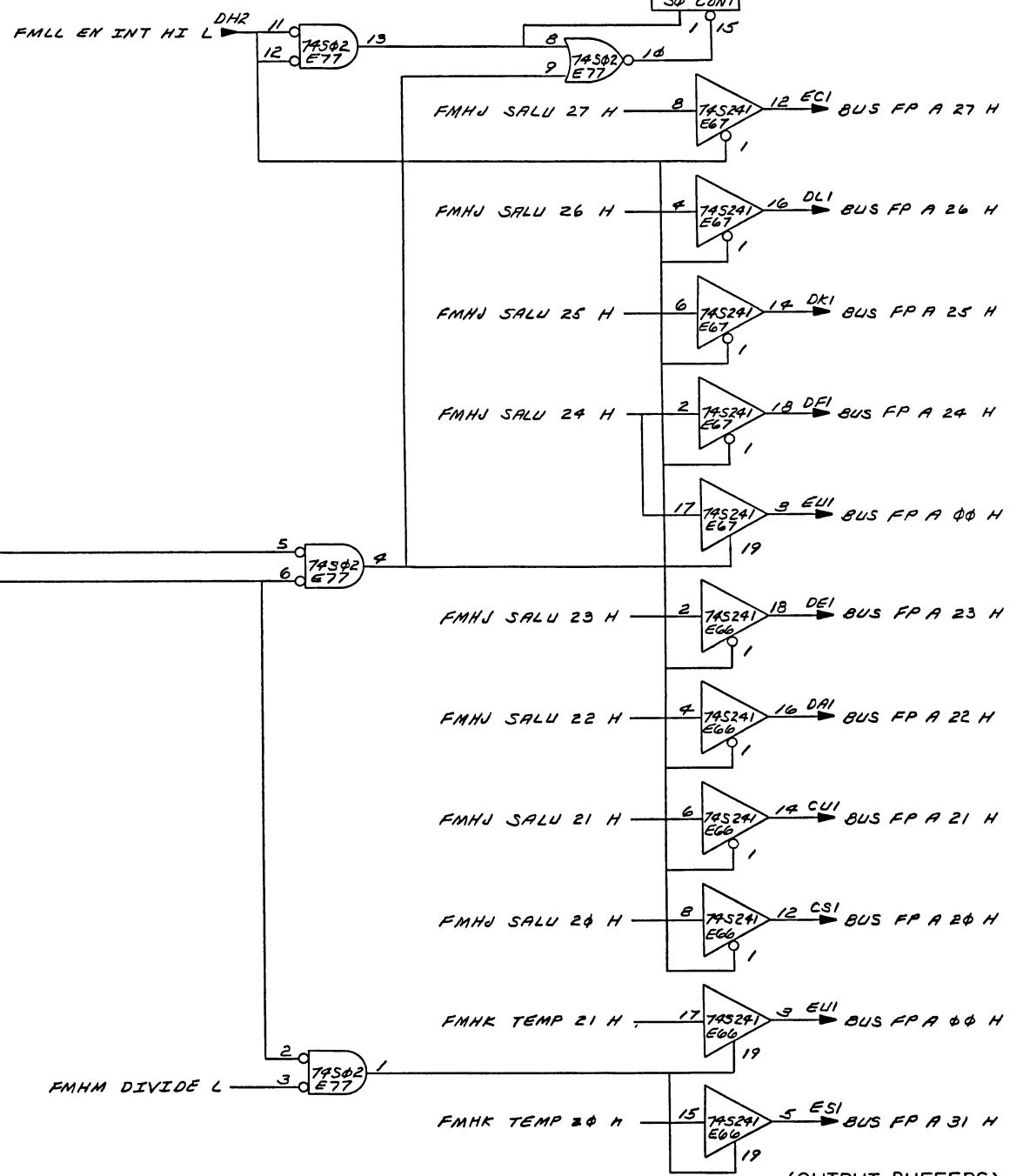


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FCTF DIVIDE H DUR

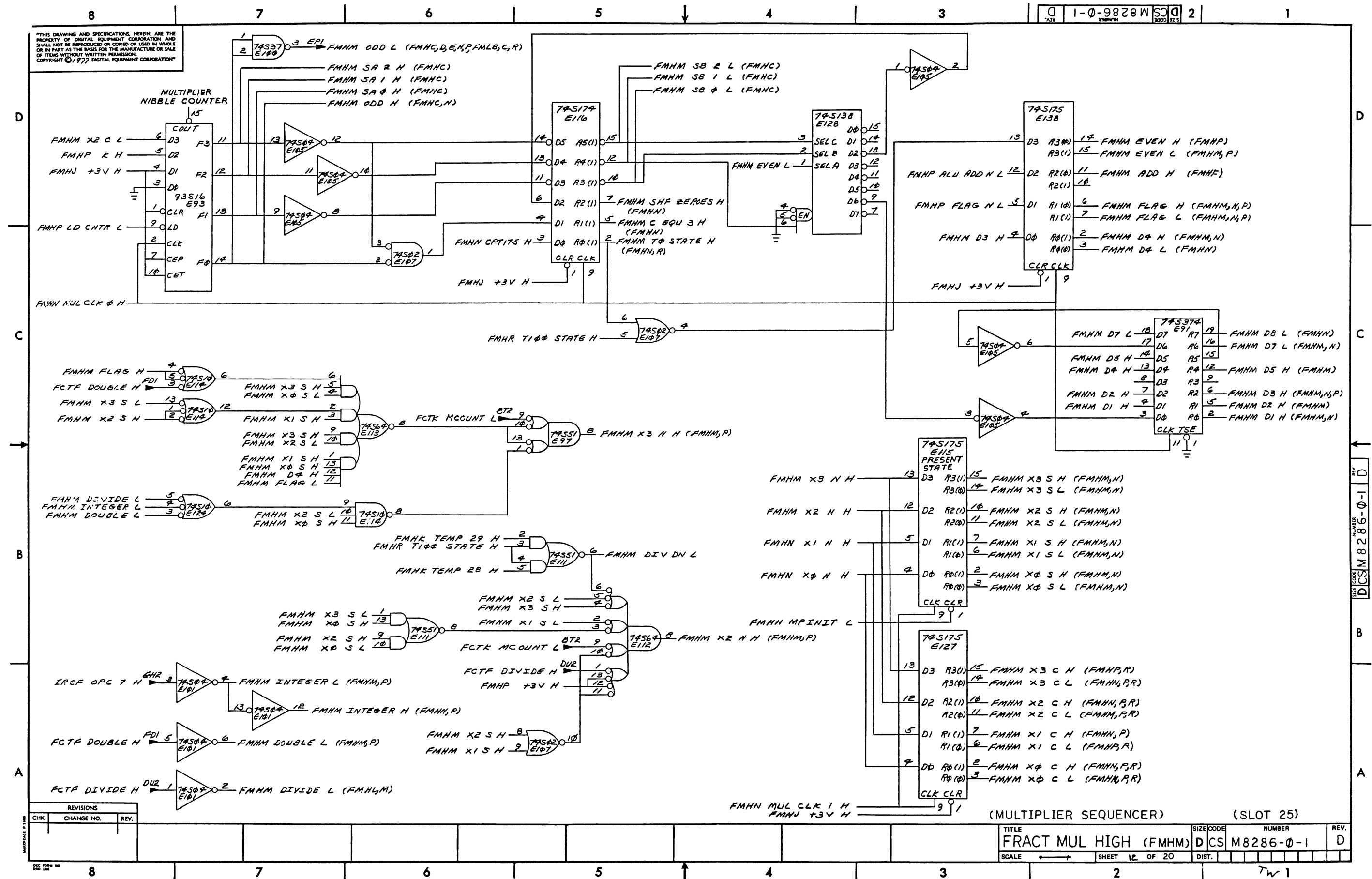
FMLL EN PROD/QUOT L DJ2

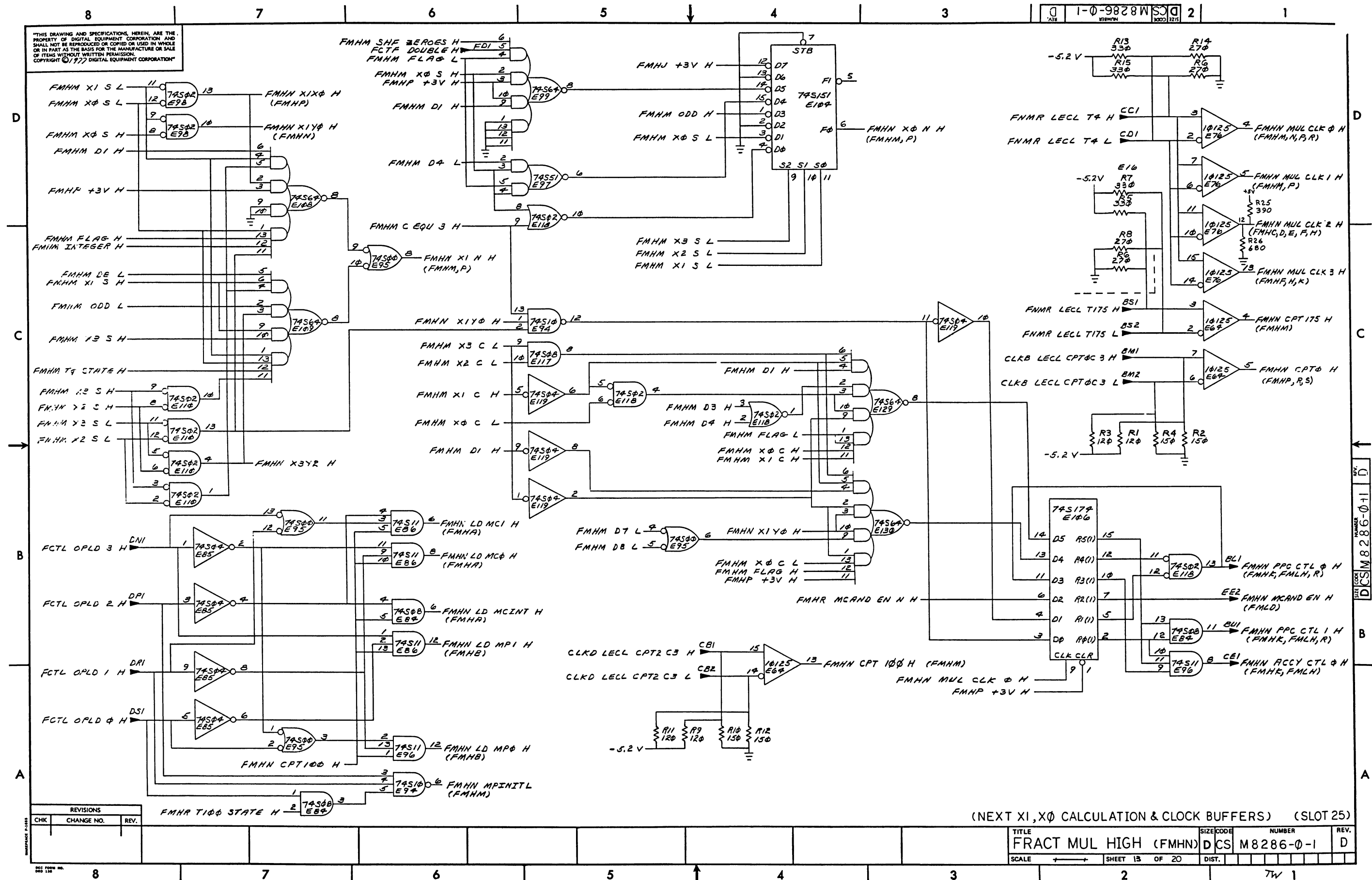


(OUTPUT BUFFERS) (SLOT 25)

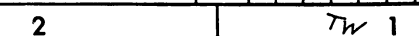
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE		SIZE	CODE	NUMBER		REV.
FRACT MUL HIGH (FMHL)		D	CS	M8286-0-1		D
SCALE		SHEET 11 OF 20		DIST.		

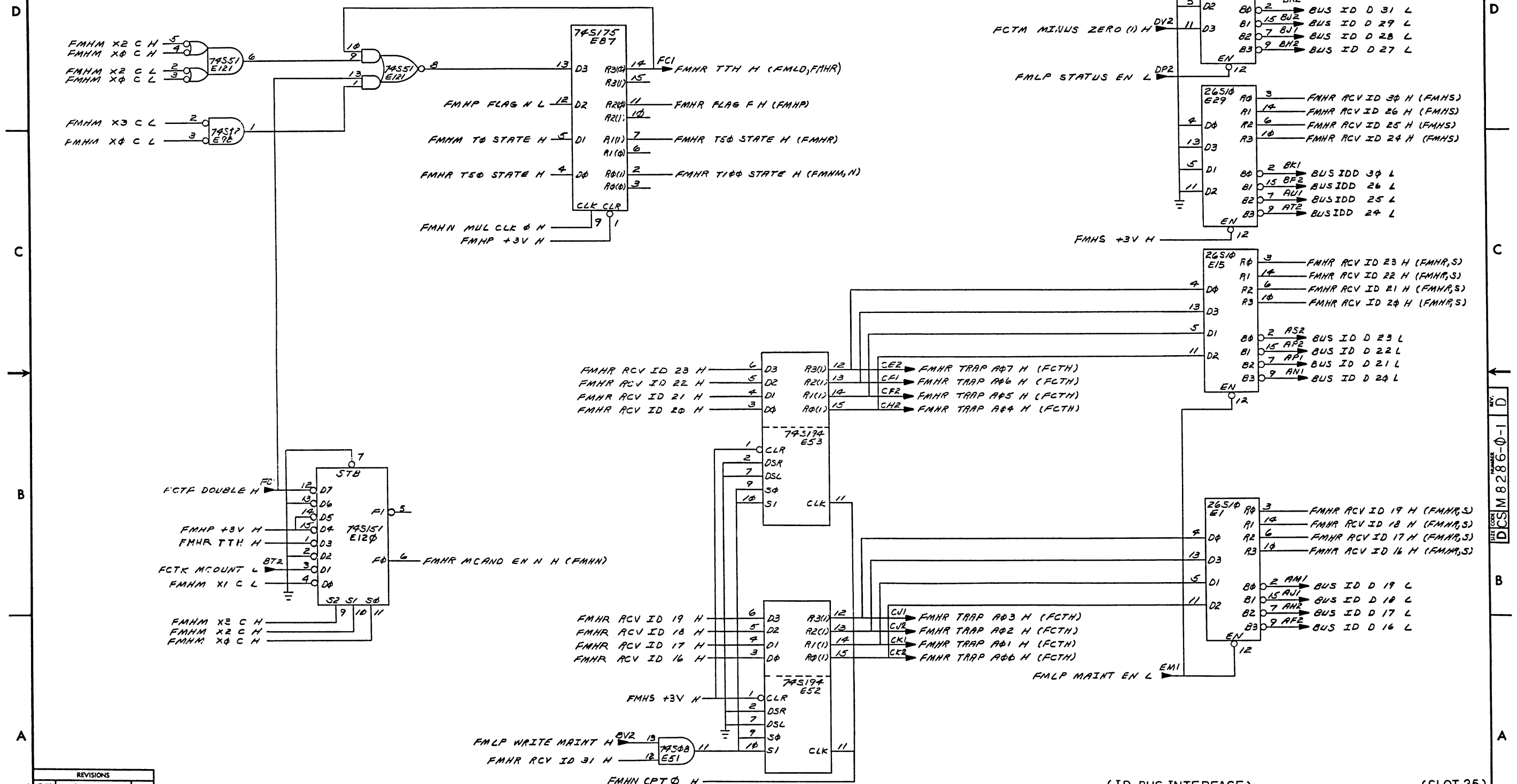




SIZE	CODE	NUMBER	REV.
D	CS	M 8286-0-1	D



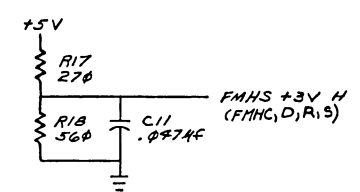
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REVISIONS		
CHK	CHANGE NO.	REV.

(ID BUS INTERFACE)		(SLOT 25)	
TITLE	FRACT MUL HIGH (FMHR)	SIZE CODE	NUMBER
SCALE	1	SHEET	15 OF 20
DIST.		REV.	
		D	

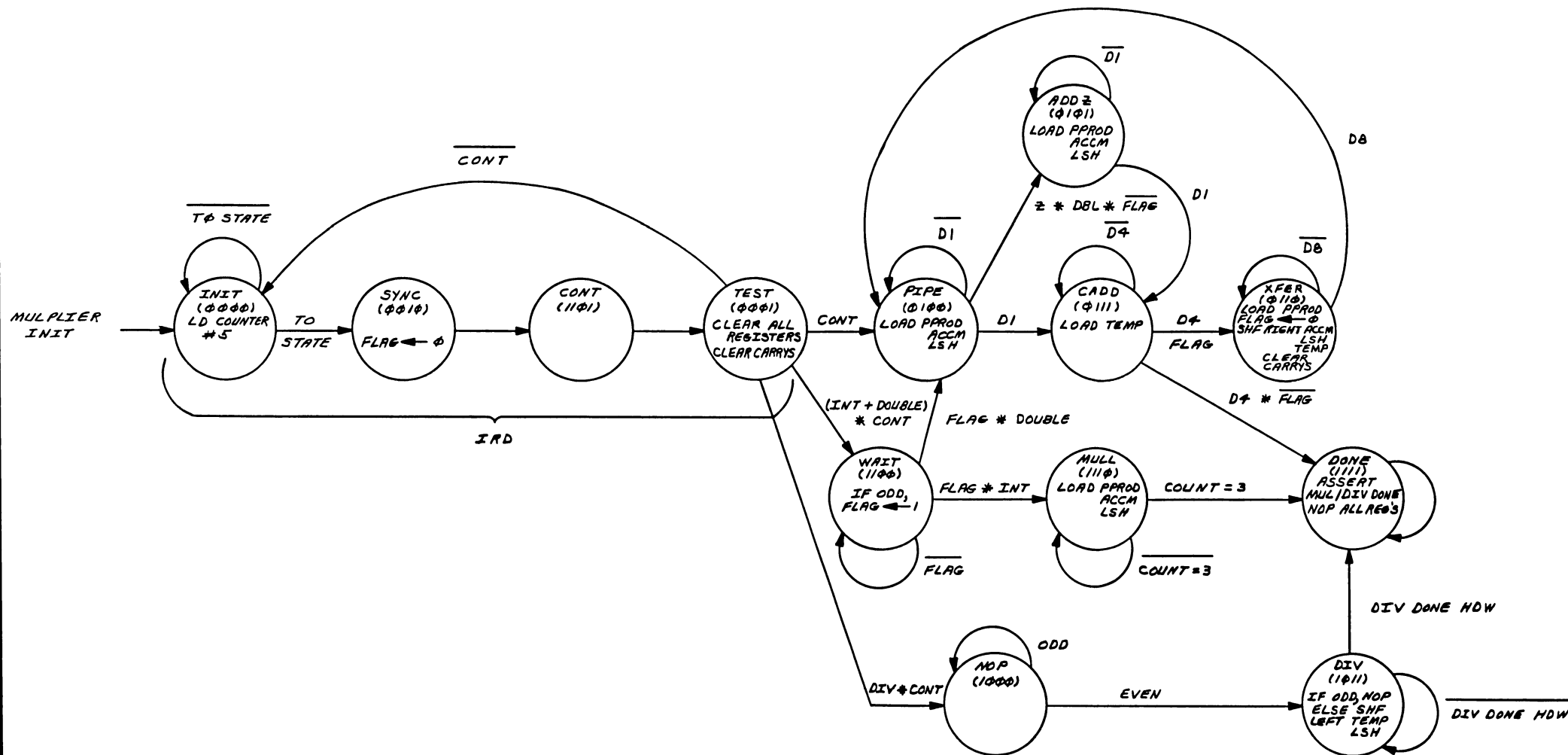
A	B	C	D
SIZE	CODE	NUMBER	REV.
M	82	86-0-1	C

DEC FORM NO.
DD FORM 136

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DCS M8286-0-1 2

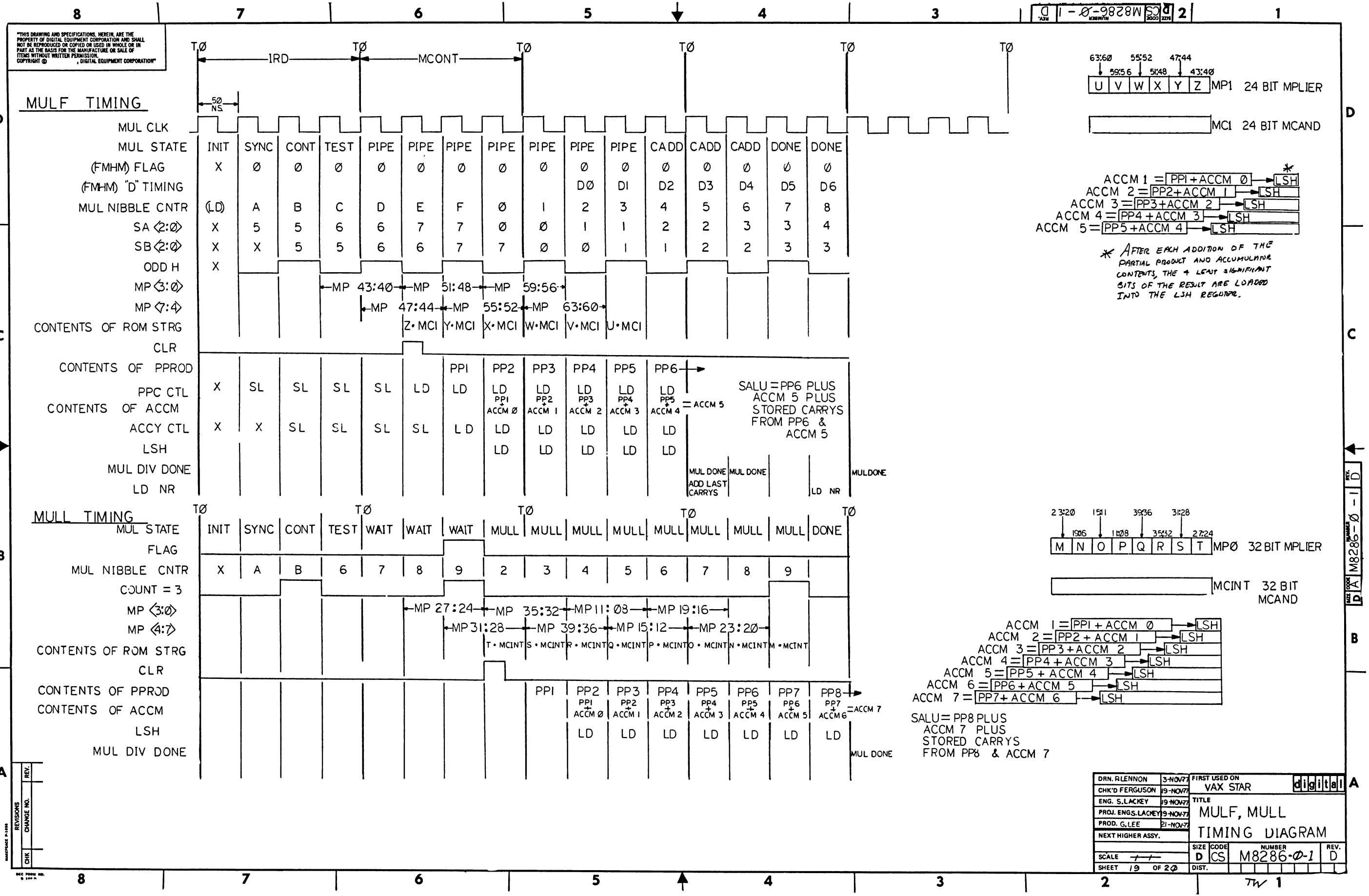
MULTIPLICAND REGISTERS ENABLED		
OPCODE	TTH	REGISTER
MULF, (POLYF)	X	MC1, MCX
MULD, (POLYD)	I	MC0, MCX
MULD, (POLYD)	0	MC1, MC1L
MULL	X	MC INT, MCX
EMODF	X	MC1, MCX
EMODD	I	MC0, MCX
EMODD	0	MC1, MC1L



REVISIONS		
CHK	CHANGE NO.	REV.

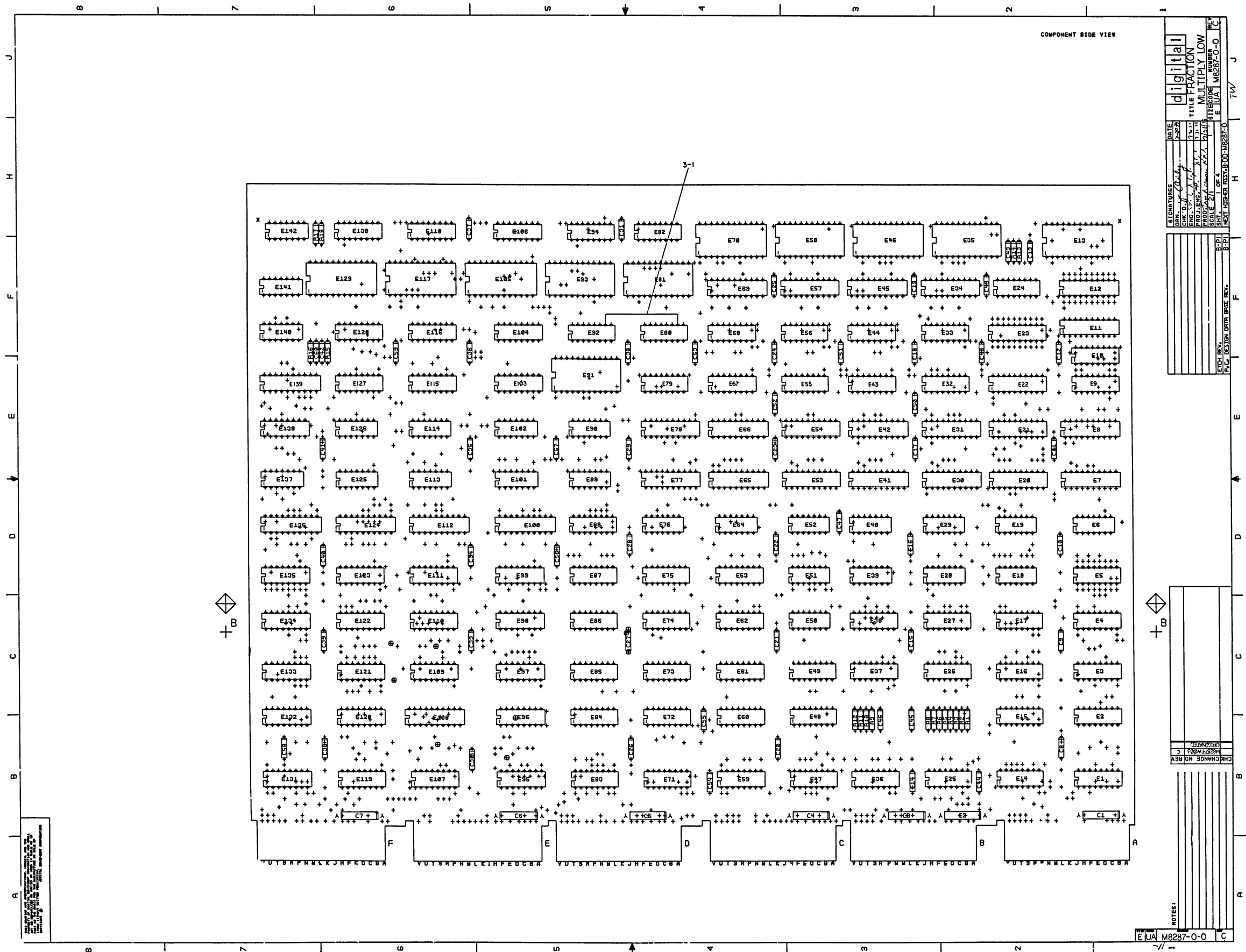
(MULTIPLIER CONTROL STATE TRANSITION DIAGRAM)

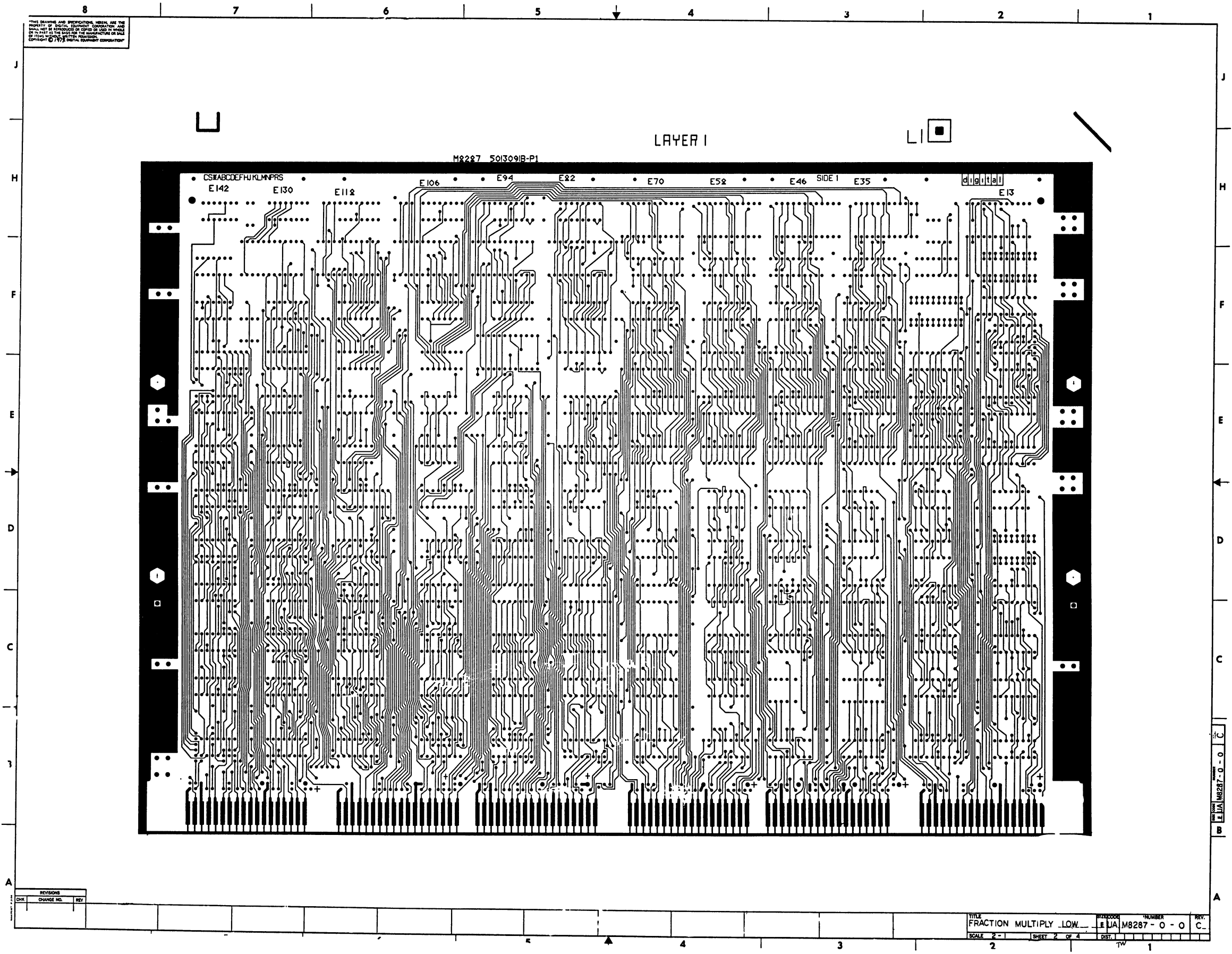
TITLE	SIZE CODE	NUMBER	REV.
FRACT MUL HIGH (FMHT)	DCS	M8286-0-1	D
SCALE	SHEET	OF	TW
	17	20	1



A

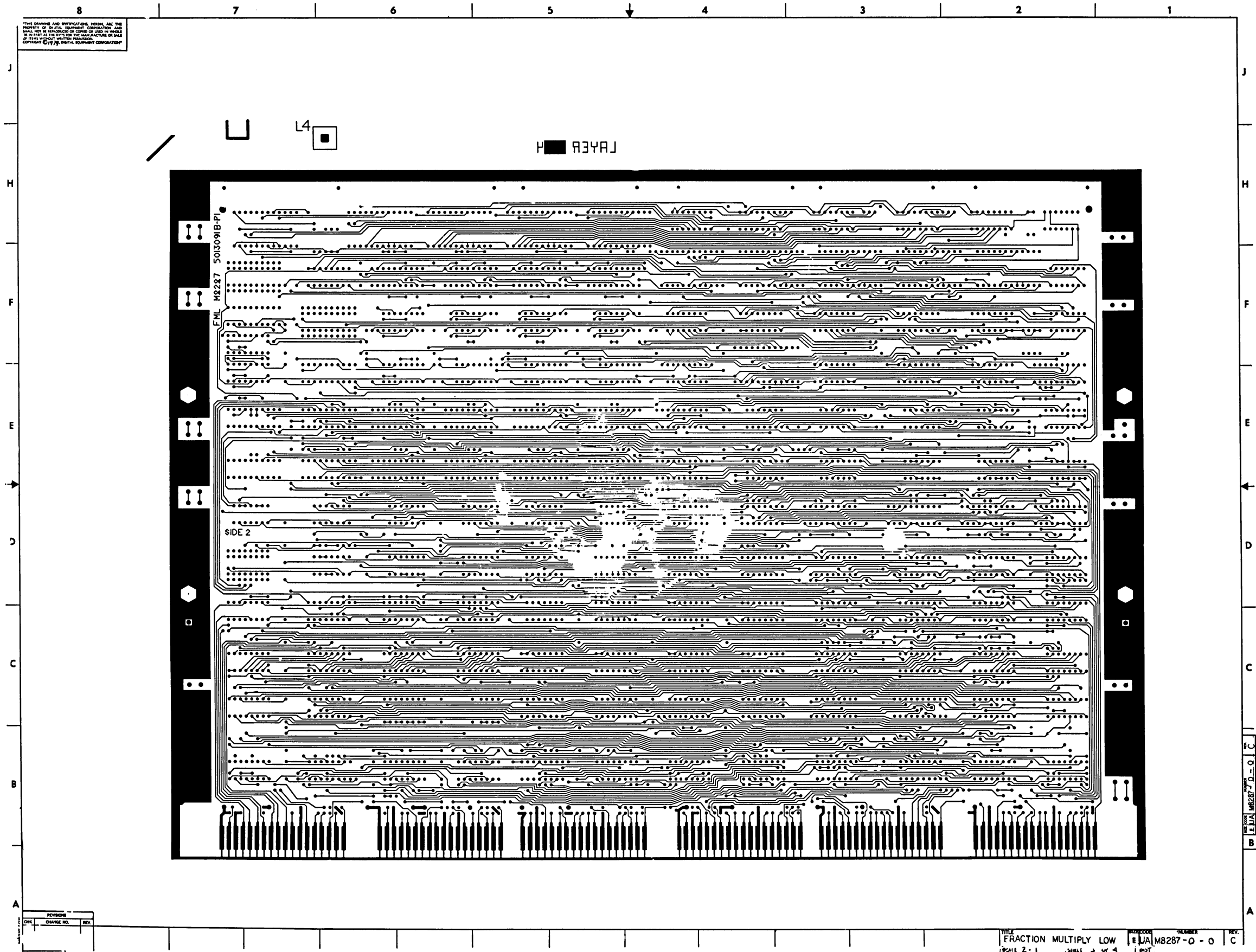


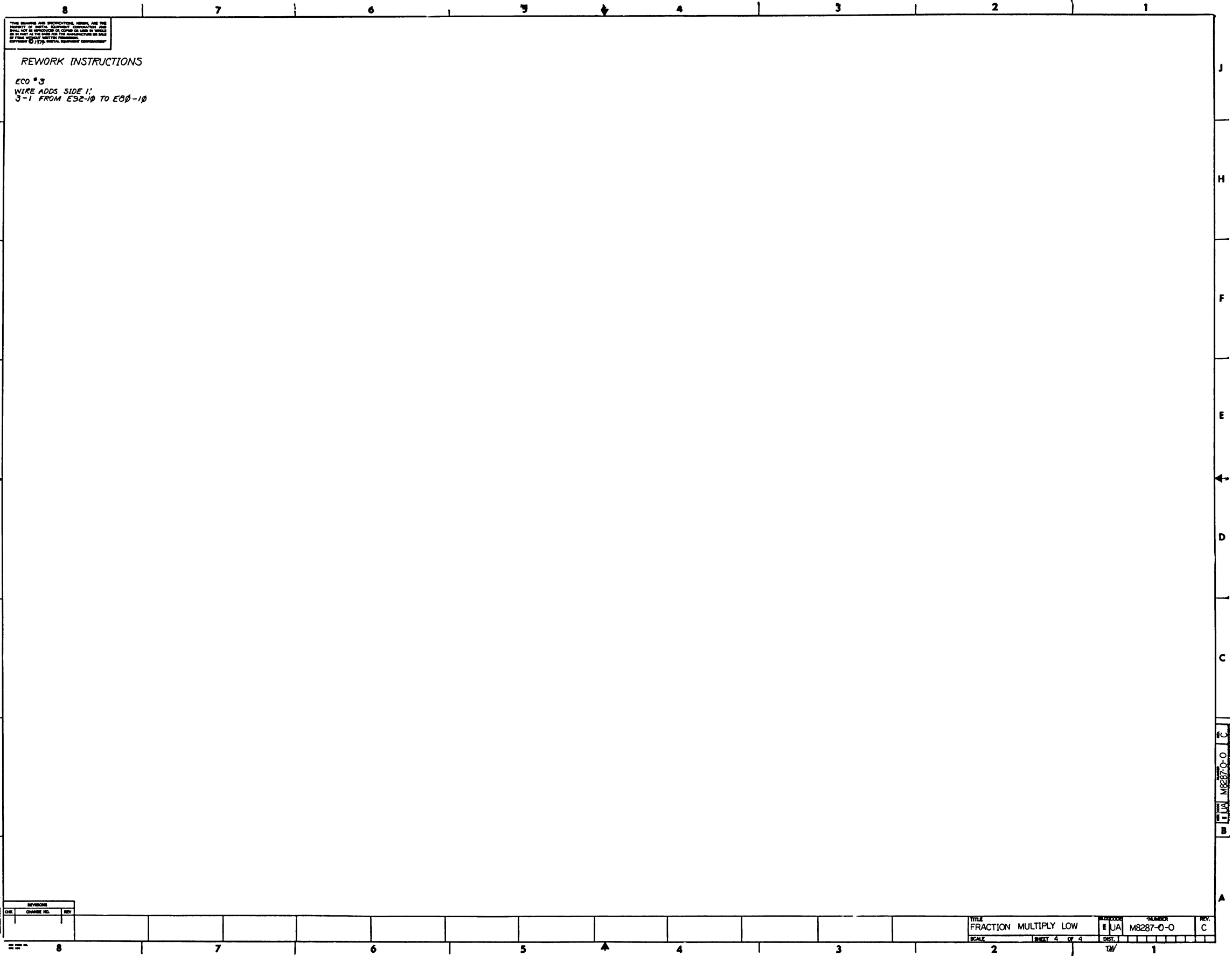




REVISIONS		
CHK	CHANGE NO.	REV

TITLE		FRACTION MULTIPLY LOW		SIZE	CODE	NUMBER	REV.
SCALE		2	1	SHEET	2	OF	4
DST.		1	TW		1		C.





LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION	REFERENCE DESIGNATOR
				00		
1	1	D-MD-5013091-0-0	5013091-00	FML	1	
2	2		1012084-01	8 MFD 75V G% 300 AT EL	7	C1-C7
3	3		1012784-00	.047 MFD 50V -20+80 CER	53	C8-C60
4	4		1300247-00	120 1/4W 5% CC	4	R2,R4,R6,R8
5	5		1300250-00	150 1/4W 5% CC	4	R1,R3,R5,R7
6	6		1301972-00	270 1/4W 5% CC	4	R9,R11,R13,R15
7	7		1300295-00	330 1/4W 5% CC	2	R10,R12
8	8		1301890-00	560 1/4W 5% CC	2	R14,R16
9	9		1910532-00	74S00 NAND GATE-QUAD 2INS	3	E19,E102,E125
10	10		1910534-00	74S04 INVERTER GATE-HEX 1I	6	E51,E76,E89,E126,E140,E141
11	11		1912389-00	74S08 AND GATE-QUAD 2IN,PO	4	E6,E64,E113,E137
12	12		1910536-00	74S10 NAND GATE-TRIPLE 3IN	3	E40,E50,E101
13	13		1910537-00	74S11 AND GATE-TRIPLE 3INP	2	E52,E114
14	14		1910539-00	74S20 NAND GATE-DUAL 4INPU	4	E28,E29,E39,E90
15	15		1912746-00	DEC 74S37 NAND GATE-QUAD 2IN	2	E18,E142
16	16		1910548-00	74S157 MUX 1 OF 2 (QUAD)	10	E9,F10,E32,E33,E43,E44,E55,E56, CONT E67,E68
17	17		1910531-00	DEC 74S181 FLN-4BIT	11	E13,E35,E46,E58,E70,E81,E91,E93, CONT E105,E117,E129
18	18		1912097-00	SN 74S182 LOOK AND CARRY GEN	1	E88
19	19		1910552-00	74S194 SHIFT REG.,4BIT RIGH	36	E3,E16,E24,E26,E37,E49,E61,E67, CONT E63,E73,E74,E79,E80,E82,E85,E86, CONT E92,E94,E97,E99,E103,E104,E106, CONT E109,E111,E115,E116,E118,E121, CONT E123,E127,E128,E130,E133,F135, CONT E138
20	20		1913493-00	74S241 OCTAL BUFFER,TRI-STA	1	E108
21	21		1911641-00	SN 74S257 MUX,QUAD 2 TO 1	23	E1,E2,E4,E14,E15,F17,E27,E38, CONT E48,E60,E72,E84,E95,E96,E98, CONT E107,E110,E119,E120,E122,E131,

REVISION HISTORY			BASIC PART NO: M8287		DRN: F SMART		DATE: 19-OCT-77		D I G I T A L	
ENG	ECO NUMBER	REV	SECTION A OF A							
---	INITIAL	C	SECTION VARIATION INDEX		CHK'D: F SMART		DATE: 19-OCT-77		TITLE PARTS LIST	
			[A] 00						FRACTION MULITPLY LOW	
			[B]							
			[C]		DES.ENG: S LACKEY		DATE: 21-OCT-77			
			[D]							
			[E]						DOCUMENT NUMBER	
			[F]		RESP.ENG.: S LACKEY		DATE: 21-OCT-77			
			[H]						SIZE CODE NUMBER REV	
			[J]							
			[K]		MFG.ENG.: M TEPELLA		DATE: 21-OCT-77		K	PL M8287-0-DRP C
			[L]							
			[M]		ASSEMBLY NUMBER:		TOP DOCUMENT NUMBER:		FILE NAME: EDIT *	
			[N]		D-UA-M8287-0-0				M8287.PLS 4	
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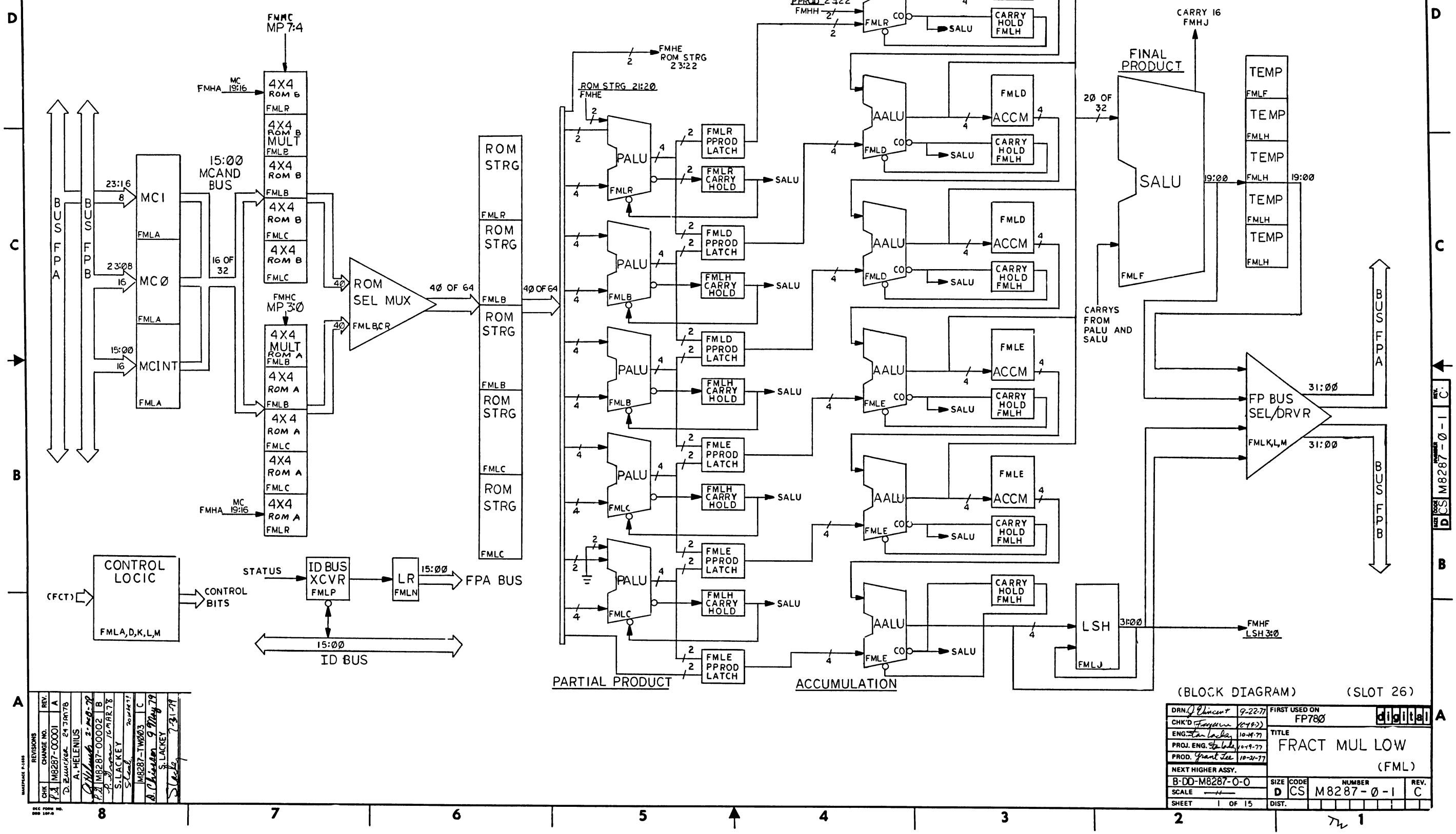
LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION 00	REFERENCE DESIGNATOR
22	22		23012B1-00	B1-01 OR CUSTOM MASKED ROM (74S2	10	CONT E132,E134 E7,E8,E30,E31,E41,E42,E53,E54.
23	23		1913670-00	74S373 LATCH 8BIT TRASP TR	5	CONT E65,E66 E20-E22,E77,E78
24	24		1913671-00	74S374 F-F-D OCTAL TRISTATE	5	E11,E34,E45,E57,E69
25	25		1913700-00	74S381 FLN-48IT	5	E100,E112,E124,E136,E139
26	26		1912828-00	LS85 COMPARATOR,4BIT MAGN	2	E75,E87
27	27		1911415-00	10125 PCM TO TTL TRNSLTR	2	E25,E36
28	28		1913788-00	26S10 TRANSCEIVER,BUS,QUA	4	E47,E59,E71,E83
29	29		1210711-02	HANDLE,MODULE,MEX	1	
30	30		9000024-01	EYELET, ROLLED FLANGE, .121 OD X	12	
31	31		9105740-55	WIRE(WRAP)30AWG UL1423	A/R	
32	32		1300309-00	390 1/4W 5% CC	1	R17
33	33		1301424-00	680 1/4W 5% CC	1	R18

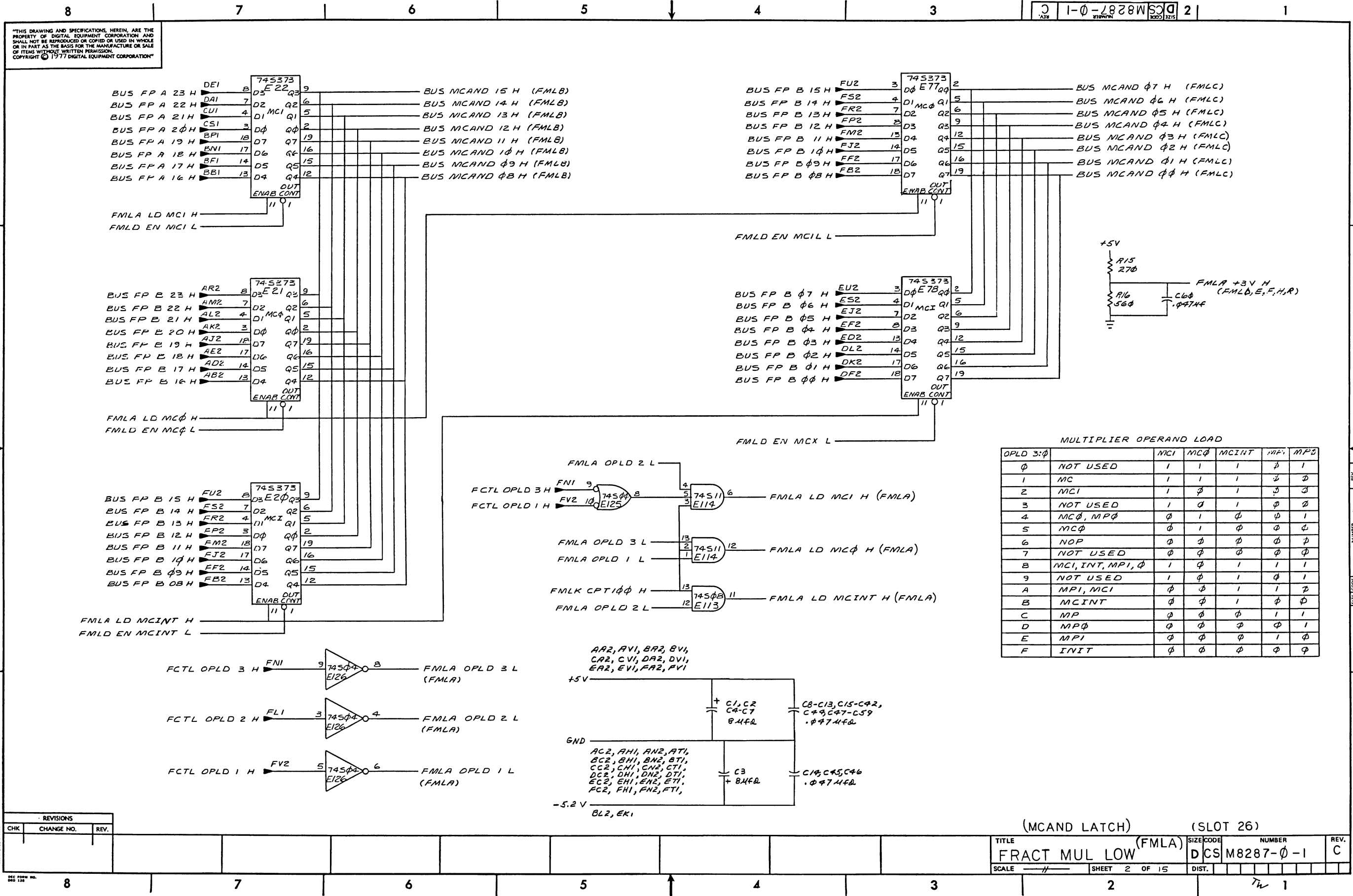
Ø NOTE: I.C. SPARE LOCATIONS ARE E5,E12,E23

D	I	G	I	T	A	L	TITLE	FRACTION MULITPLY LOW	SECTION A OF A	SIZE	CODE	DOCUMENT NUMBER	REV
										K	PL	48287-0-DRP	C

FML-CPU SIGNAL NAME TRANSLATION TABLE	
SIGNAL NAME	C.S. PAGE USED ON
ICLJ ID LEFT ADRS 0 H	FMLP
ICLJ ID LEFT WRITE L	FMLP

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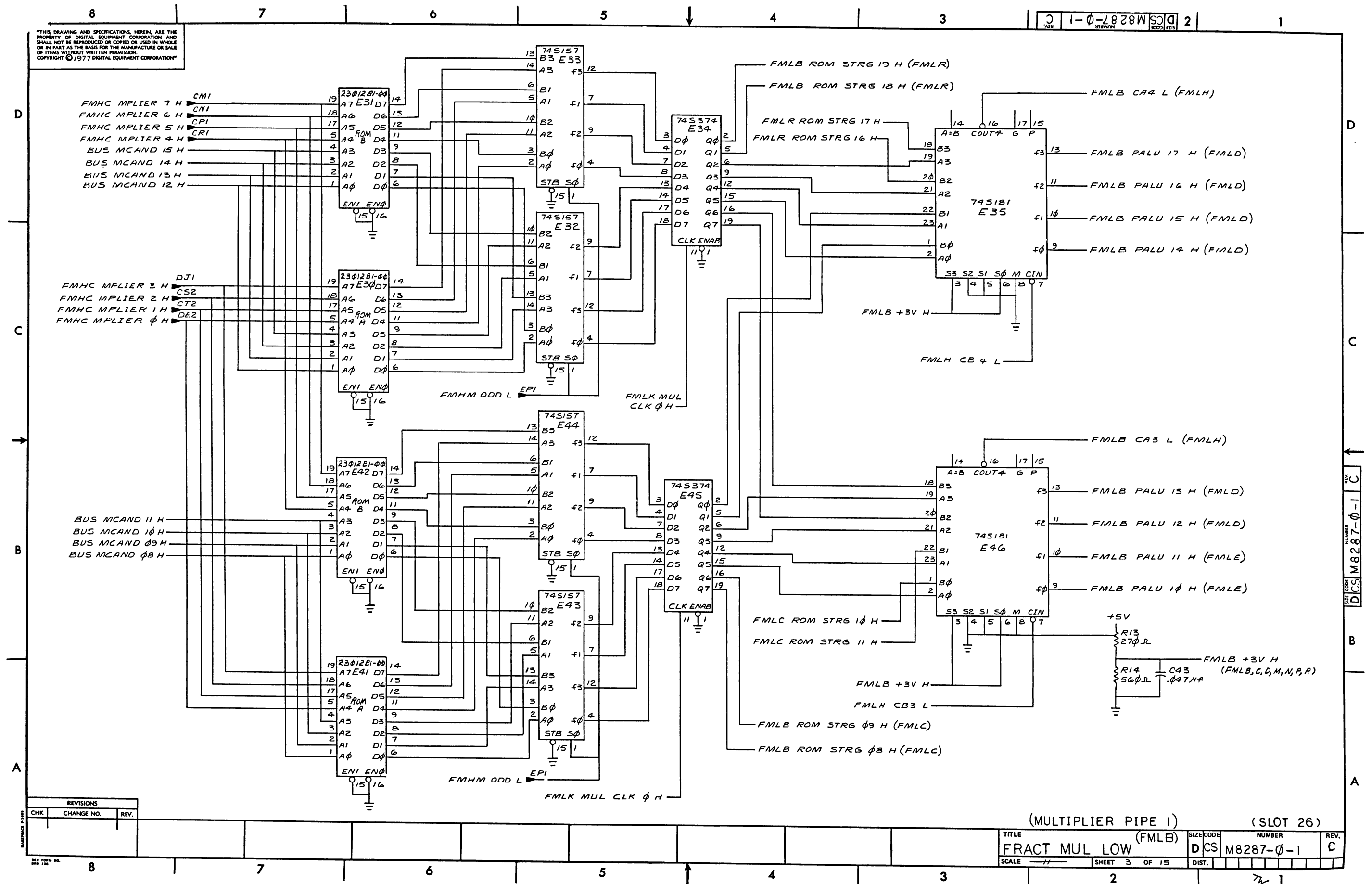


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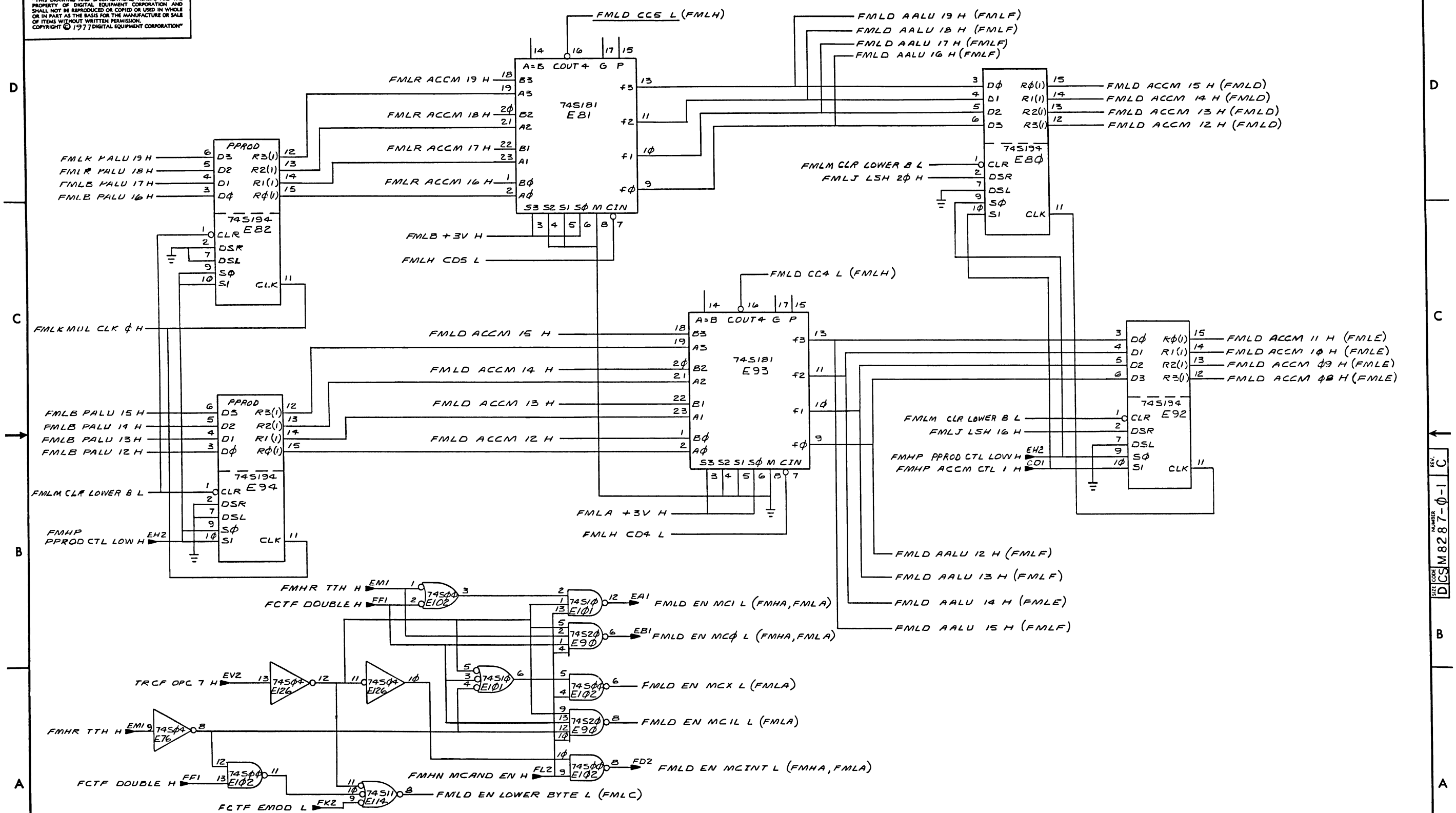
MULTIPLIER OPERAND LOAD						
OPLD 3:φ		MCI	MCφ	MCINT	MPφ	MP5
φ	NOT USED	1	1	1	φ	1
1	MC	1	1	1	φ	φ
2	MCI	1	φ	1	φ	φ
3	NOT USED	1	φ	1	φ	φ
4	MCφ, MPφ	φ	1	φ	φ	1
5	MCφ	φ	1	φ	φ	φ
6	NOP	φ	φ	φ	φ	φ
7	NOT USED	φ	φ	φ	φ	φ
8	MCI, INT, MPI, φ	1	φ	1	1	1
9	NOT USED	1	φ	1	φ	1
A	MPI, MCI	φ	φ	1	1	φ
B	MCINT	φ	φ	1	φ	φ
C	MP	φ	φ	φ	1	1
D	MPφ	φ	φ	φ	φ	1
E	MPI	φ	φ	φ	1	φ
F	INIT	φ	φ	φ	φ	φ

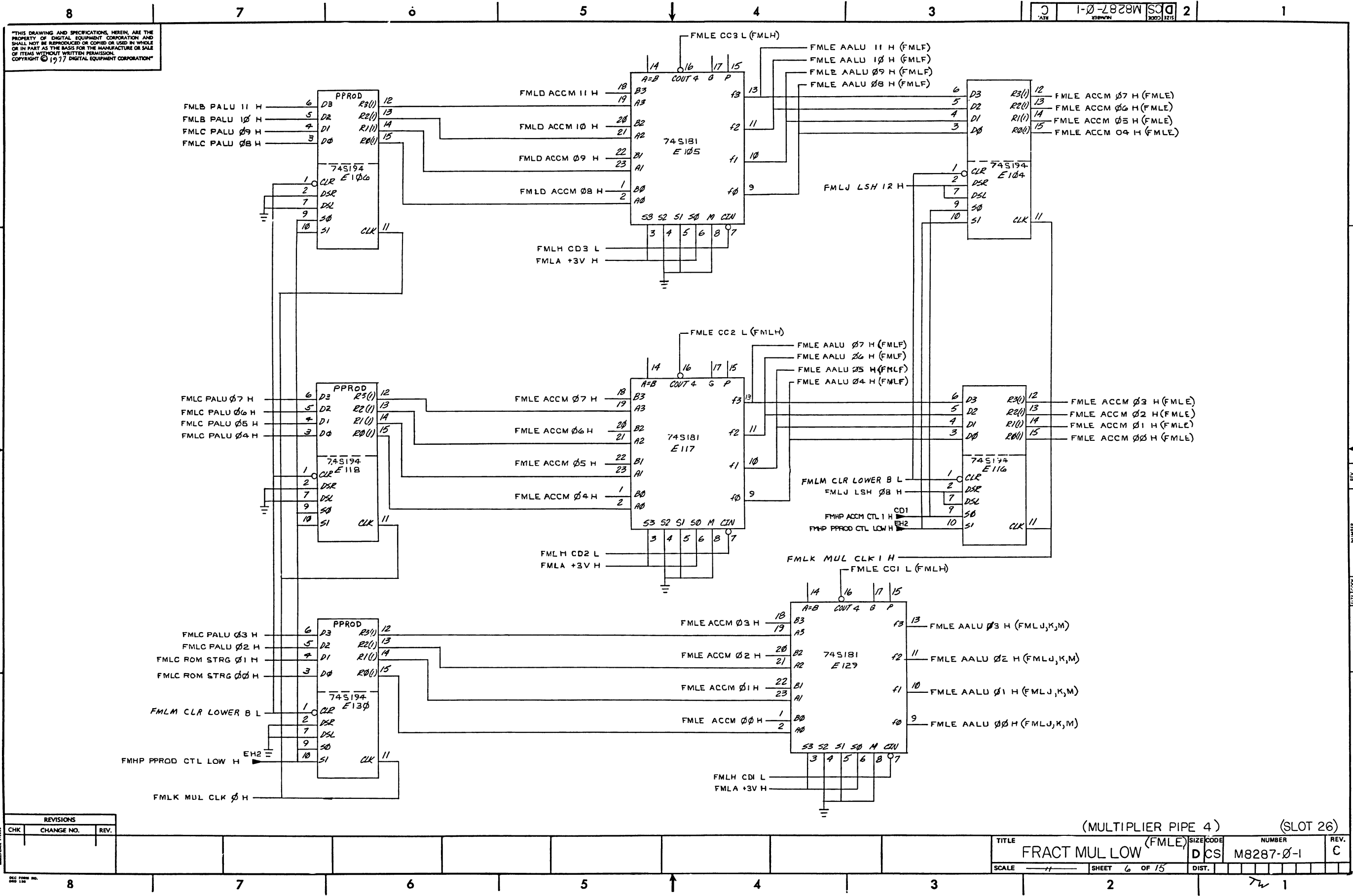
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE		(MCAND LATCH)		(SLOT 26)	
FRACT MUL LOW (FMLA)		SIZE CODE	NUMBER	REV.	
SCALE		SHEET 2 OF 15	DIST.	C	



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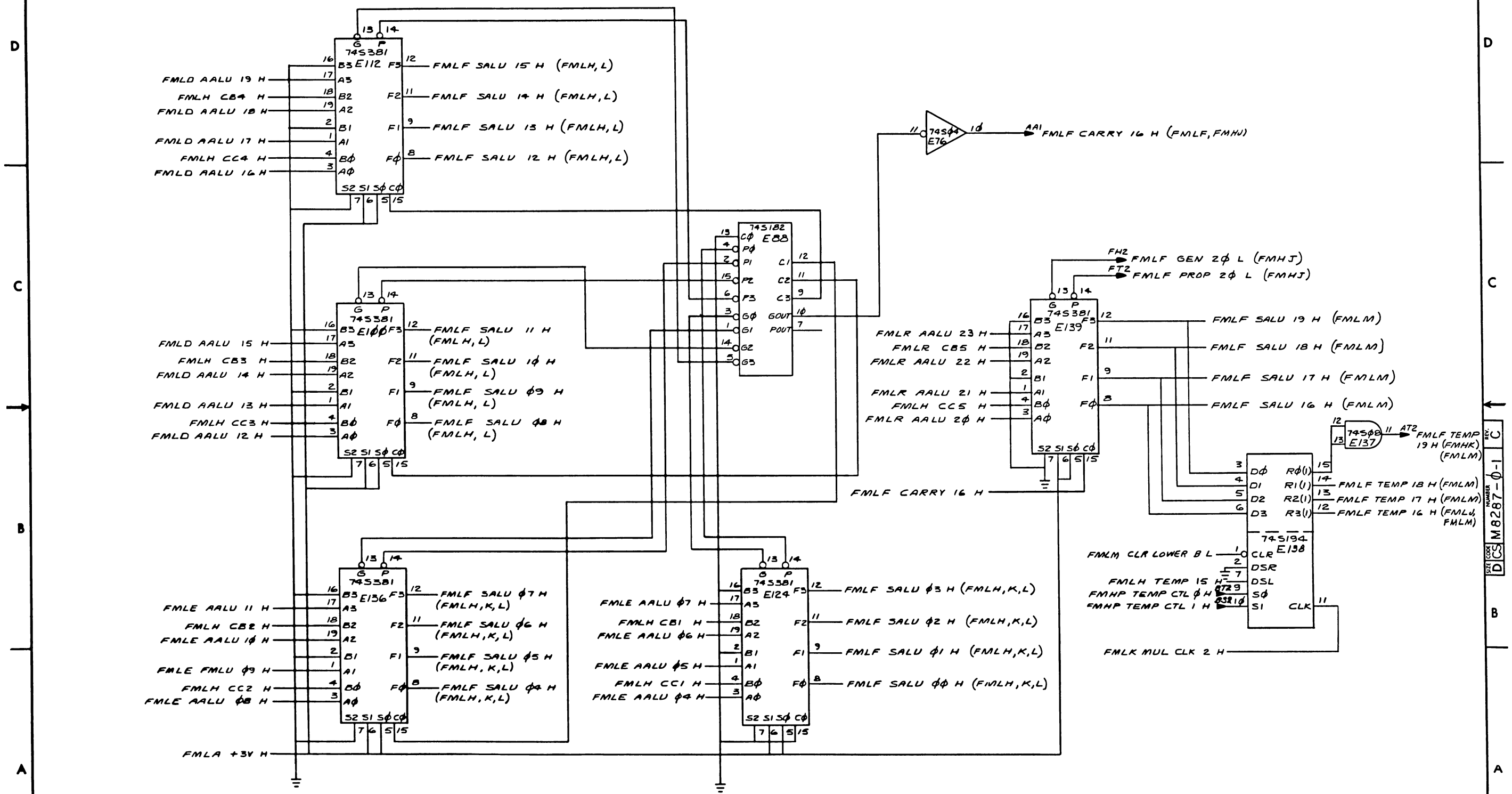


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REVISIONS		
CHK	CHANGE NO.	REV.

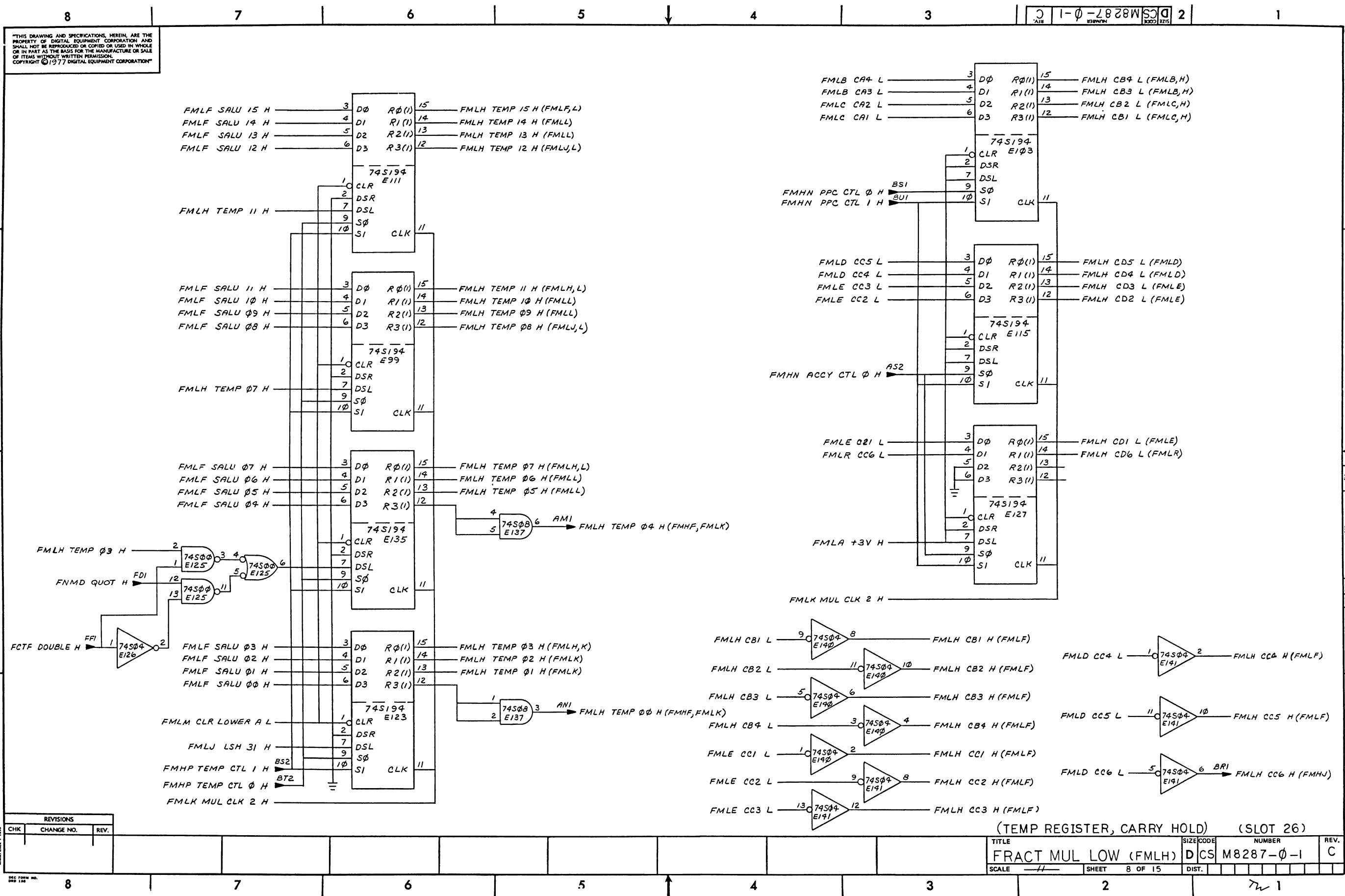
TITLE		(MULTIPLIER PIPE 4)	(SLOT 26)
FRACT MUL LOW (FMLE)		SIZE CODE	NUMBER
SCALE		DCS	M8287-0-1
SHEET 6 OF 15		DIST.	REV. C

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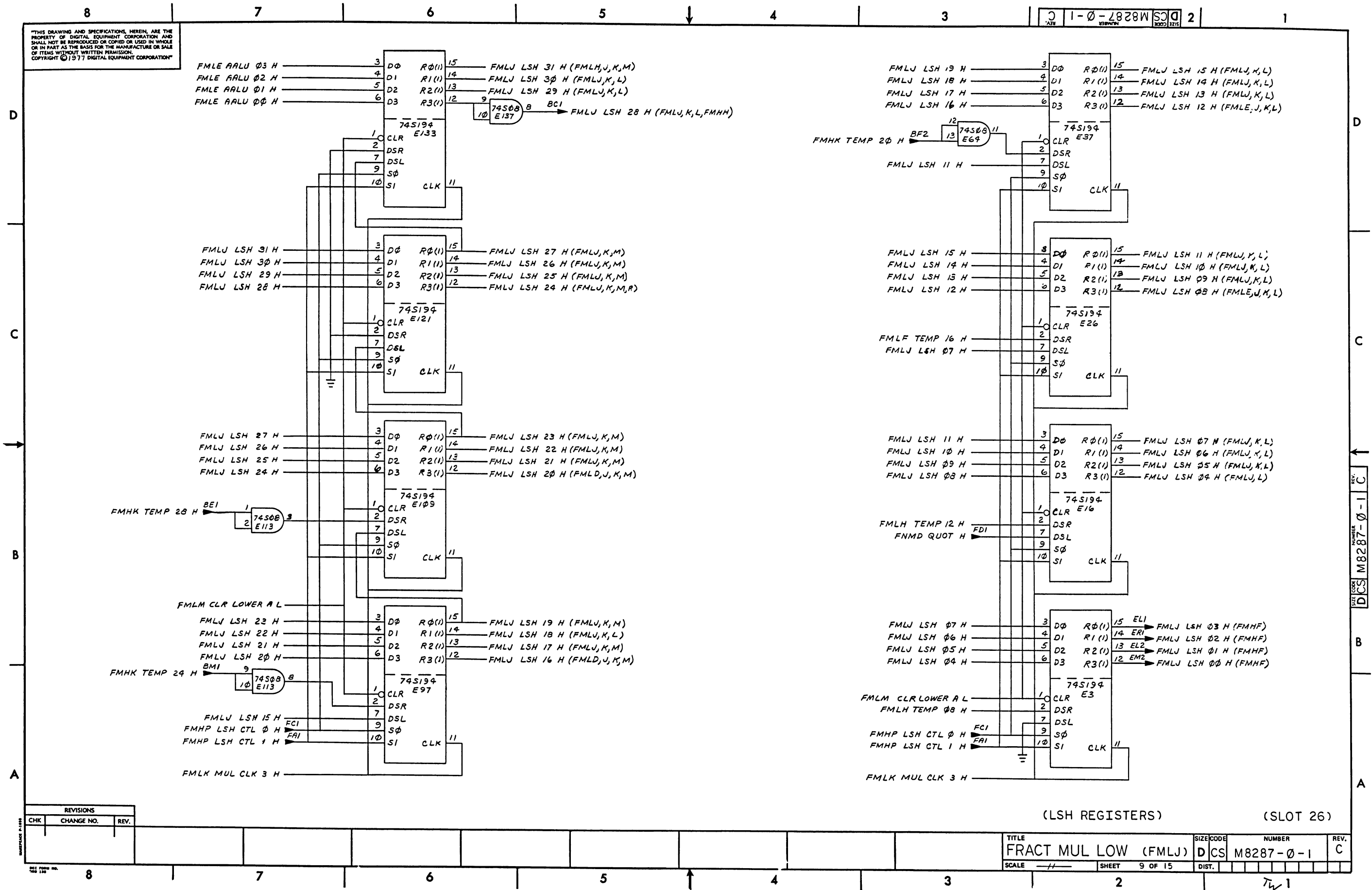
REVISIONS		
CHK	CHANGE NO.	REV.

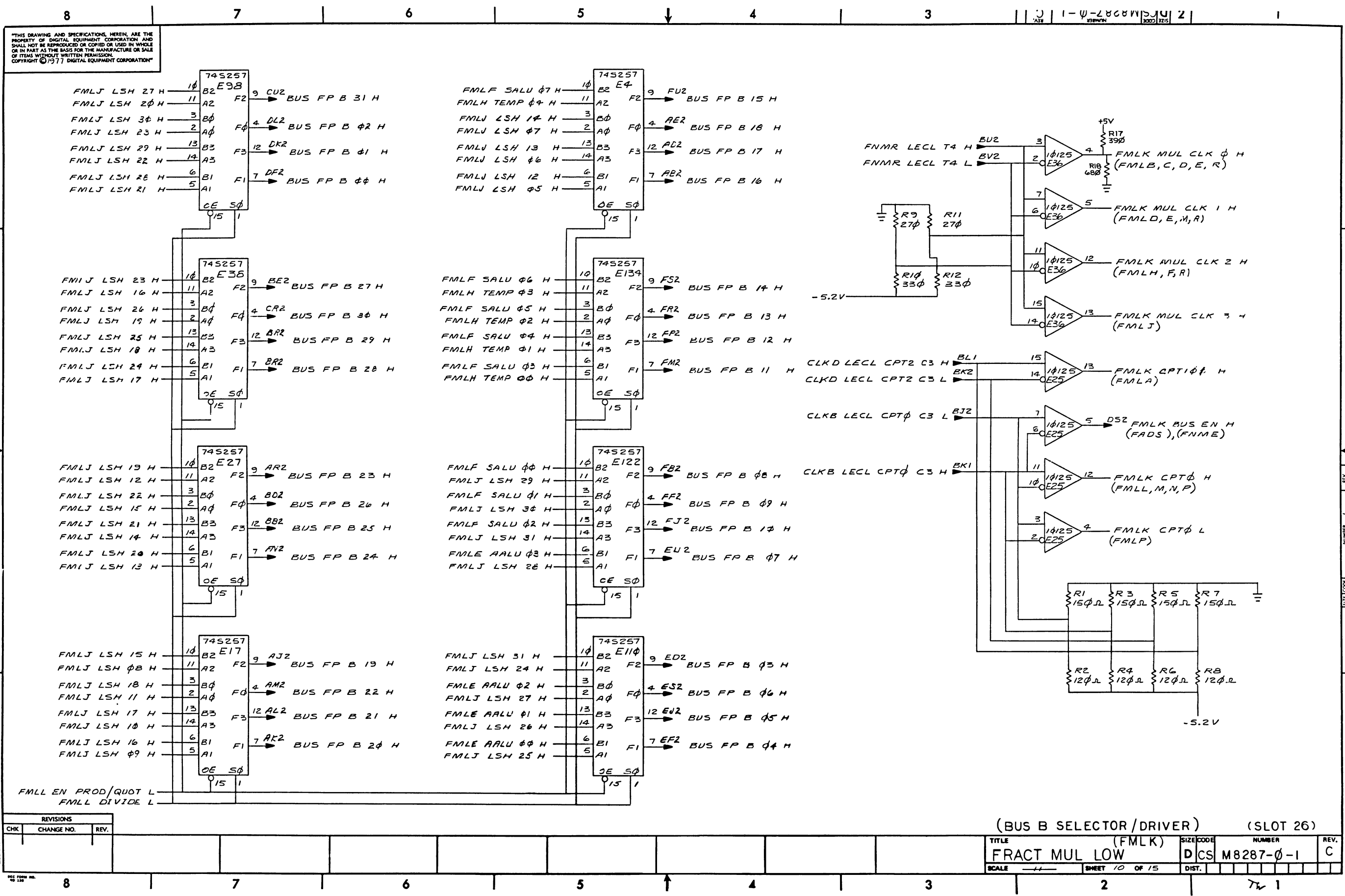
(LEAST SIGNIFICANT HALF OF ADDER)		(SLOT 26)
TITLE	FRACT MUL LOW (FMLF)	SIZE CODE
NUMBER	DCS M8287-0-1	REV.
SCALE	1/1	SHEET 7 OF 15
DIST.		



REVISIONS		
CHK	CHANGE NO.	REV.

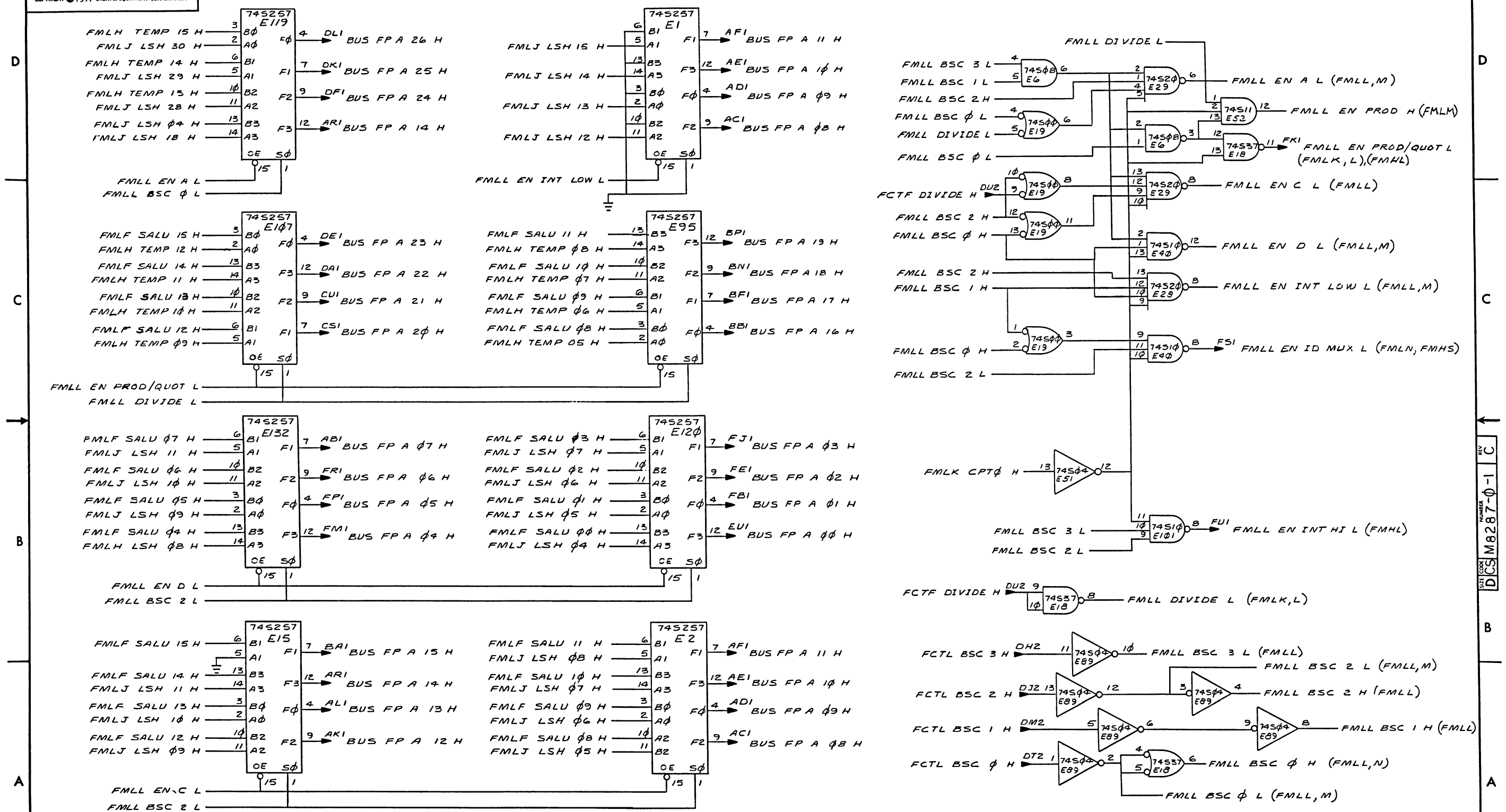
TITLE		SIZE	CODE	NUMBER	REV.
FRACT MUL LOW (FMLH)		D	CS	M8287-0-1	C
SCALE	SHEET	8	OF	15	DIST.





REVISIONS			(BUS B SELECTOR/DRIVER)				(SLOT 26)			
CHK	CHANGE NO.	REV.	TITLE				NUMBER			
			FRAC MUL LOW				DCS M8287-0-1			
			SCALE				SHEET 10 OF 15			

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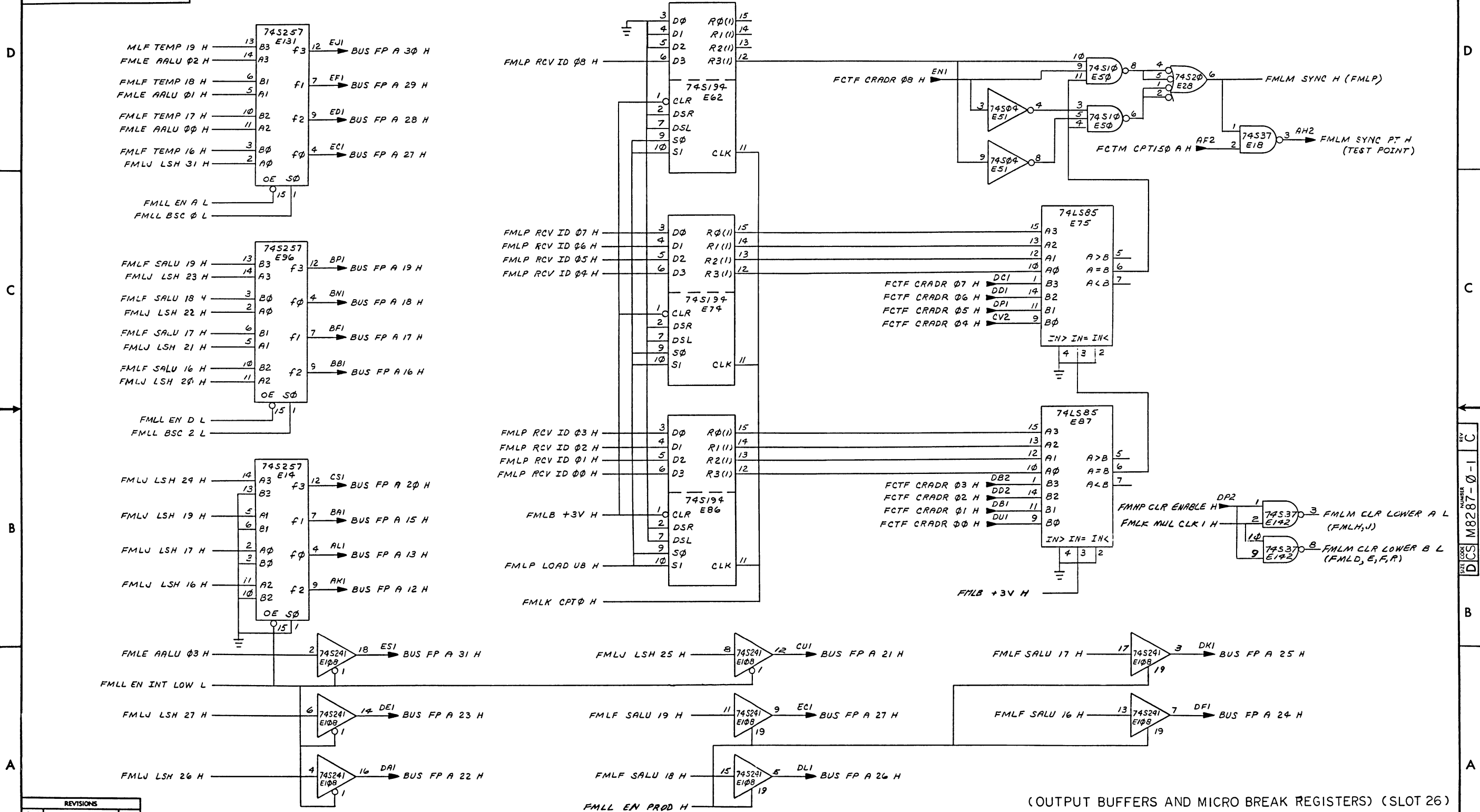
REVISIONS			(OUTPUT BUFFERS)		(SLOT 26)	
CHK	CHANGE NO.	REV.	TITLE		SIZE CODE	NUMBER
			FRACT MUL LOW		DCS	M8287-0-1
			SCALE		SHEET 11	OF 15
					DIST.	

REVISIONS		
CHK	CHANGE NO.	REV.

MANUFACTURE P-100

REV. C
NUMBER
DCS M8287-0-1

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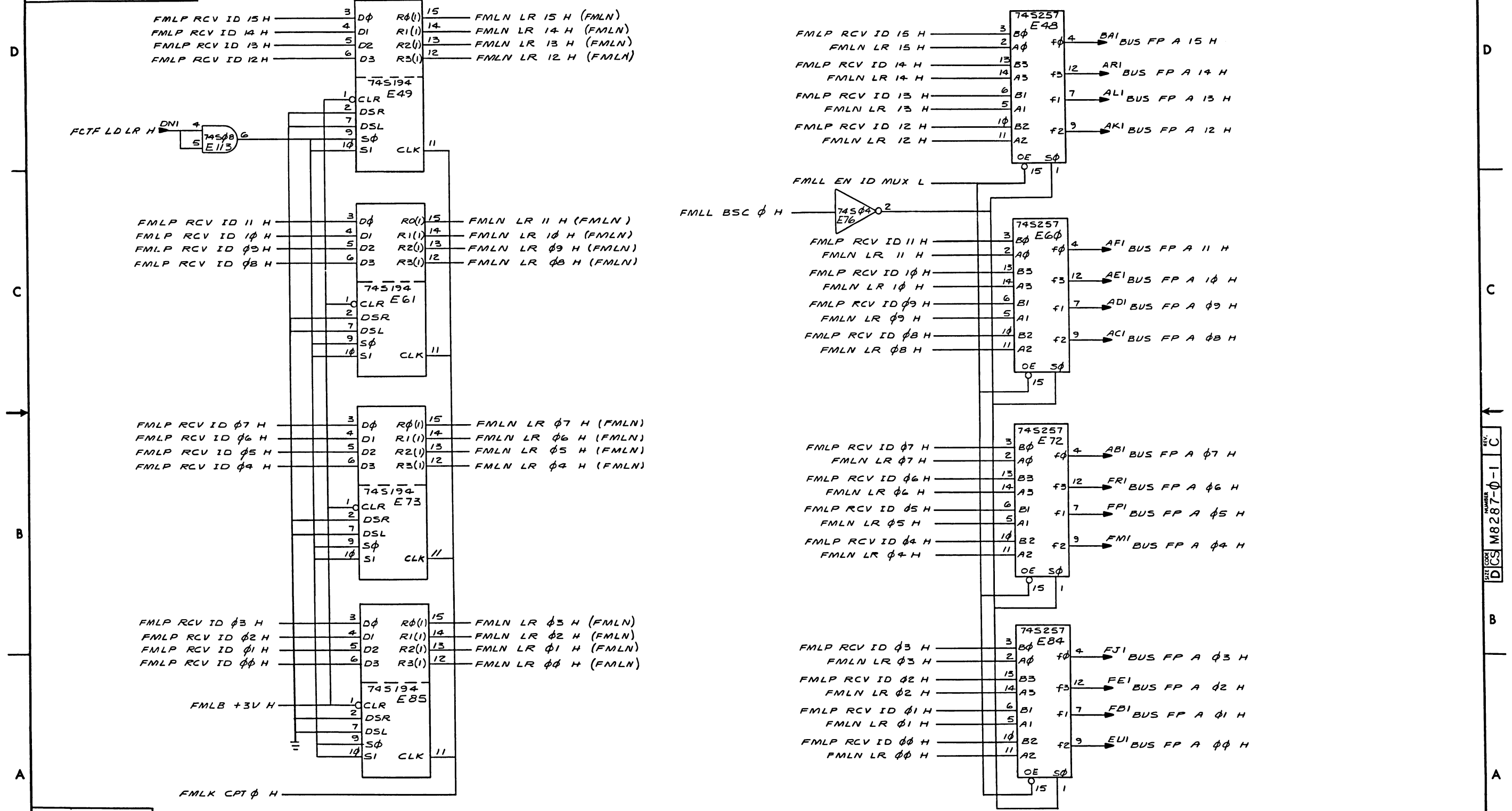
REVISIONS		
CHK	CHANGE NO.	REV.

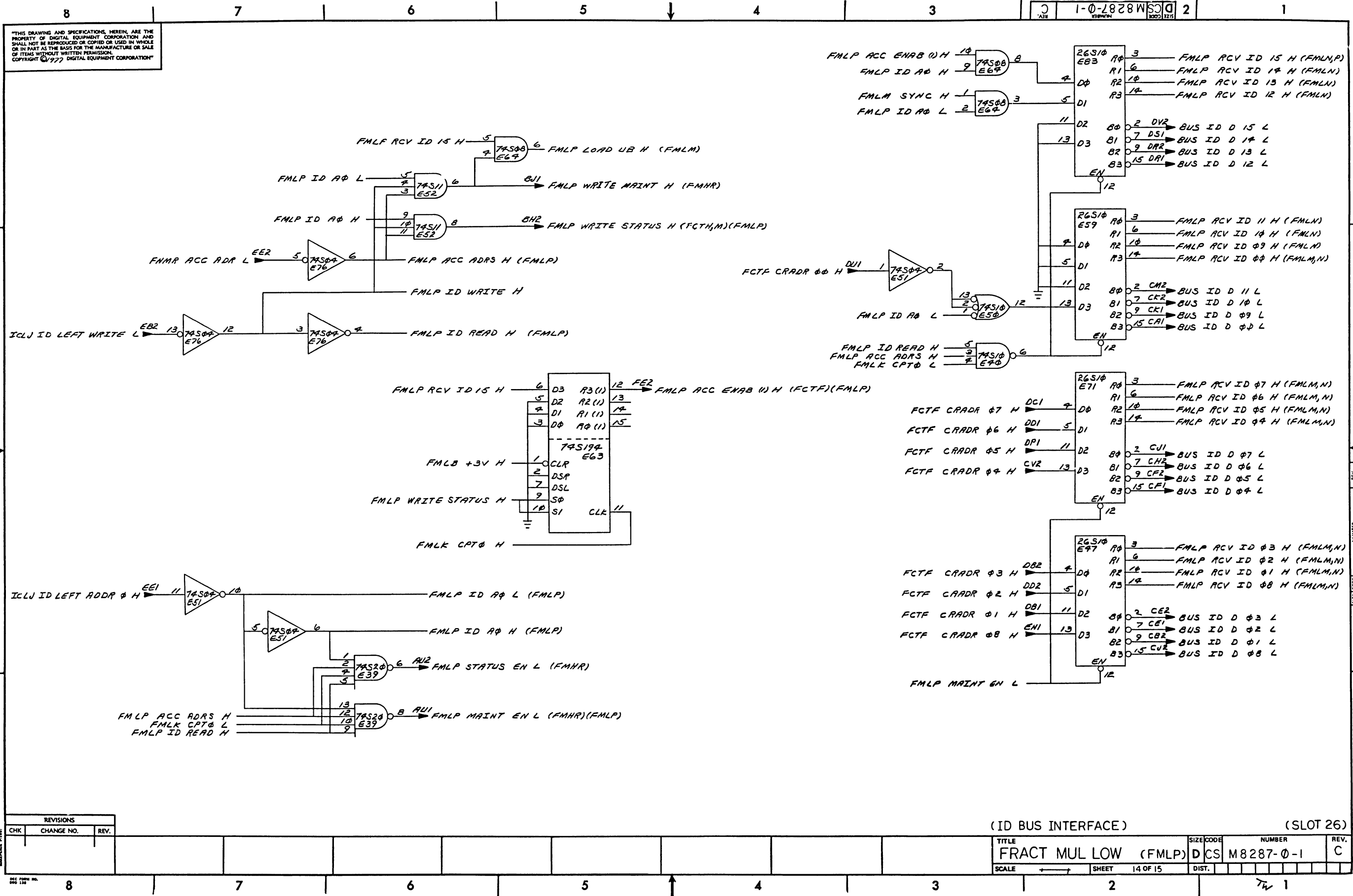
(OUTPUT BUFFERS AND MICRO BREAK REGISTERS) (SLOT 26)

TITLE		SIZE CODE	NUMBER	REV.
FRACT MUL LOW (FMLM)		D CS	M8287-0-1	C
SCALE	SHEET	DIST.		
1/1	12 OF 15			

REV C
NUMBER M8287-0-1
SIZE CODE DCS

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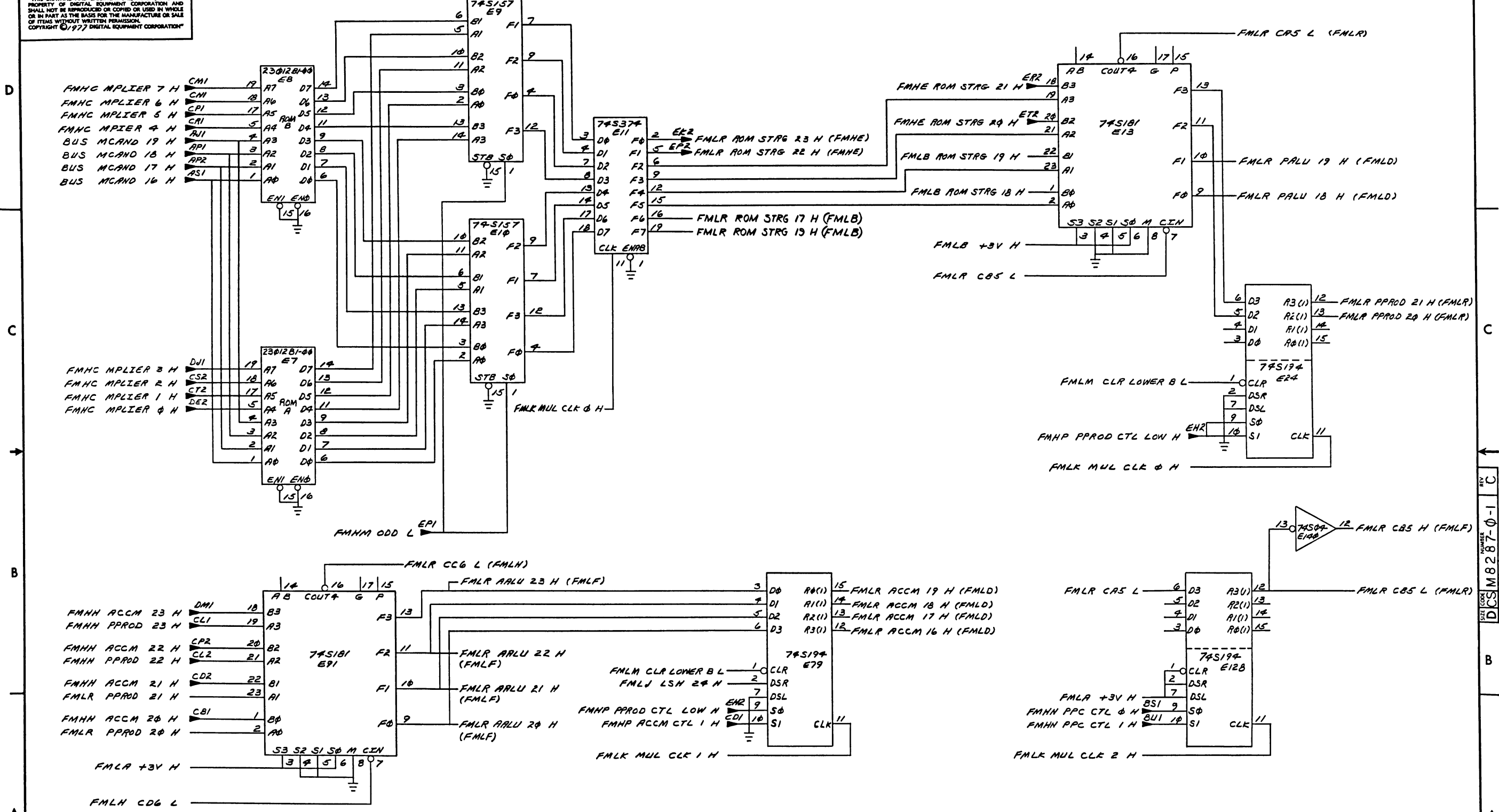




REVISIONS		
CHK	CHANGE NO.	REV.

(ID BUS INTERFACE)				(SLOT 26)			
TITLE			SIZE	CODE	NUMBER		REV.
FRACT MUL LOW (FMLP)			D	CS	M8287-0-1		C
SCALE	SHEET	14 OF 15	DIST.				

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DRAWING NO.		NO. OF SHTS.	PART NO.	DESCRIPTION	REVISIONS																				
E-UA-M8288-Ø-Ø		3		FRACTIONAL ADDER	*																				
B-PL-M8288-Ø-Ø		2		FRACTIONAL ADDER	*																				
D-CS-M8288-Ø-1		17		FRACTIONAL ADDER	*																				
E-ID-5013085-Ø-Ø		5		DRILL & ETCH DRAWING	*																				
			5013085	ETCHED BOARD	Λ																				
M8288-Ø-L				P.C. DESIGN DATA BASE	Λ																				
NOTES:				REVISIONS	DATE	CHG NO.	REV.																		
					THIS DRAWING AND SPECIFICATIONS, HEREIN, ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION. COPYRIGHT© 1977 DIGITAL EQUIPMENT CORPORATION		<div>digital</div>		USED ON OPTION/MODEL		DRN	9-27-77	TITLE												
		CHKD	9-27-77	FRACTIONAL ADDER																					
		ENG	9-28-77	SIZE					CODE	NUMBER															
		PROD.	9-27-77	B					DD	M8288-Ø															
				SHEET 1 OF 1																					

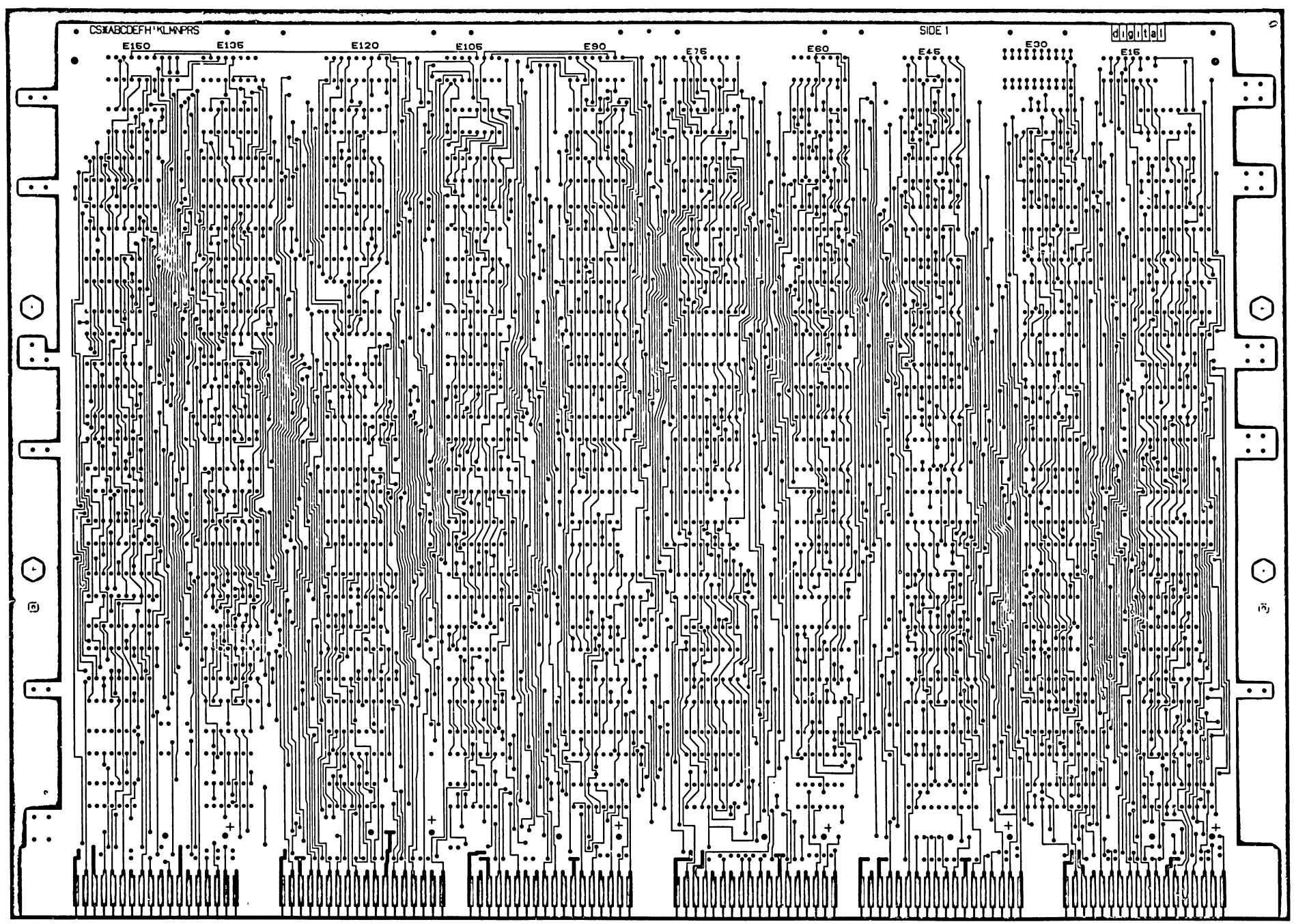


NOTES:

[illegible]

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OFFICE OF THE SECRETARY OF DEFENSE.

5013085A
M8288A LAYER 1



REVISIONS		
CHR	CHANGE NO	REV

TITLE	SIZE CODE	NUMBER	REV
FRACTION ADDER	EJA	M8288-0-0	*
SCALE 1	SHEET 27 OF 3	DIST	1

DIGITAL EQUIPMENT CORPORATION				QUANTITY / VARIATION													
PARTS LIST																	
MADE BY D. BILODEAU		CHECKED <i>Frank Smart</i>		SECTION													
DATE 27 JUNE 77		DATE 9-27-77															
ENG DATE <i>Slackay 9-30-77</i>		PROD DATE <i>Mike Tomlin 9-27-77</i>		ISSUED SECTION													
DATE		DATE															
ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION	M8288-0-0												REF DESIGNATION	
1	D-MD-5013085-0-0	5013085	ETCH BOARD														
2		1012784	CAPACITOR, .047 uf 50V	33												C1,C8 thru C24,C26,C28 thru C31,C34 thru C43	
3		1012084-01	CAPACITOR, 8 uf 25 W	6												C2 thru C7	
4		1301890	RESISTOR, 560 OHM, 1/4W, 5%	2												R3,R4	
5		1301972	RESISTOR, 270 OHM, 1/4W, 5%	2												R1,R2	
6		1910532	I.C. DEC 74S00	3												E106, E121, E137	
7		1910534	I.C. DEC 74S04	1												E91	
8		1912389	I.C. DEC 74S08	1												E136	
9		1910536	I.C. DEC 74S10	1												E94	
10		1912746	I.C. DEC 74S37	2												E79, E81	
11		1910541	I.C. DEC 74S40	1												E122	
12		1910545	I.C. DEC 74S112	1												E76	
13		1910548	I.C. DEC 74S157	32												E2, E3, E9, E19, E20, E22 thru E25, E34, E35, E39, E47, E49, E62, E64, E82, E90, E96, E99, E105, E111, E112, E114, E125 thru E129, E145, E146, 142	
14		1913839	I.C. DEC 74LS165	3												E107, E109, E115	
15		1912097	I.C. DEC 74S182	5												E13, E66, E86, E117, E135	
16		1911641	I.C. DEC 74S257	17												E5, E7, E8, E4, E48, E61, E63, E74, E75, E78, E93, E92, E123, E124, E138, E144, E143	
17		1913671	I.C. DEC 74S374	17												E1, E6, E16, E17, E18, E31, E32, E33, E77, E95, E98, E110, E113, E108, E139, E140, E141	
18		1913700	I.C. DEC 74S381	16												E10, E11, E12, E21, E26, E36, E80, E97, E95, E120, E130 thru E133, E147, E150	
E.C.O. NO.																	
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								SHEET 1 OF 2				INSERTION PARTS LIST DATA BASE REV					

DIGITAL EQUIPMENT CORPORATION PARTS LIST

QUANTITY / VARIATION

NOTES:

MADE BY D. BILODEAU
DATE 27 JUNE 77

CHECKED *Frank Smart*
DATE 9-27-77

SECTION

ENG S Lechay 9-30-77
DATE

PROD	<i>Mike Trella</i>
DATE	<i>9-27-7</i>

ISSUED SECTION

ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION
19		1911469	I.C. DEC 8640
20		1912693	I.C. DEC 25S1Ø
21		1210711-02	HANDLE
22		9000C24-01	EYE LET

M8288-Ø-Ø

1

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1

12

REF DESIGNATION

E46

E14,E15, E27,E28, E29,E37,E38, E40,E41,E42,
E43,E45,E44,E50 thru E60,E67 thru E73
E83,E84.E85,E87,E88, E89,E100 thru E104
E116,E118,E119,E134,E148,E149

E.C.O. NO.

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TITLE

FRACTION ADDER

ASSY NO.	
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D-UA-M8288-Ø-Ø

SHEET 2 OF 2

SIZE	
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B

	CODE
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IPL

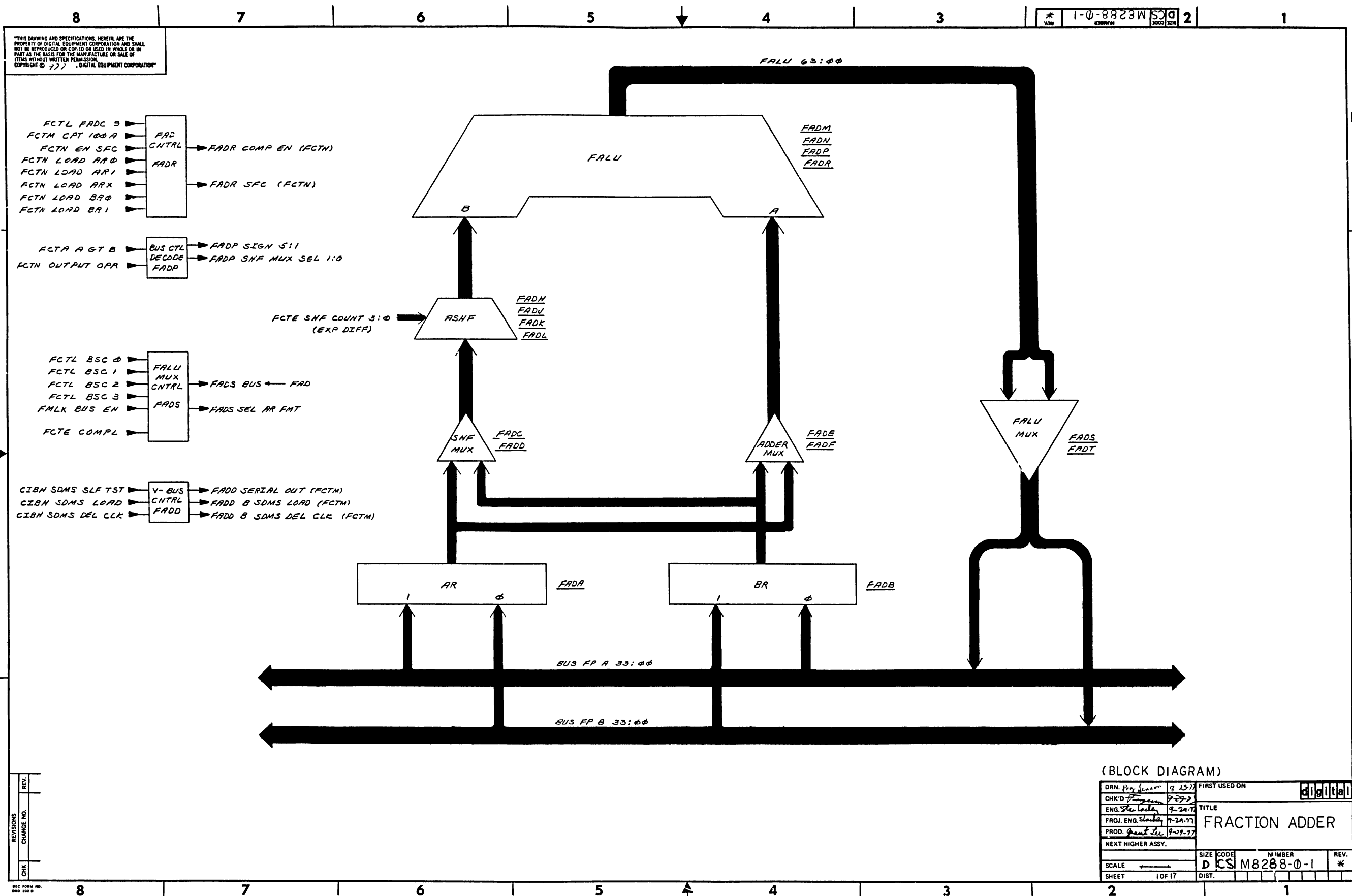
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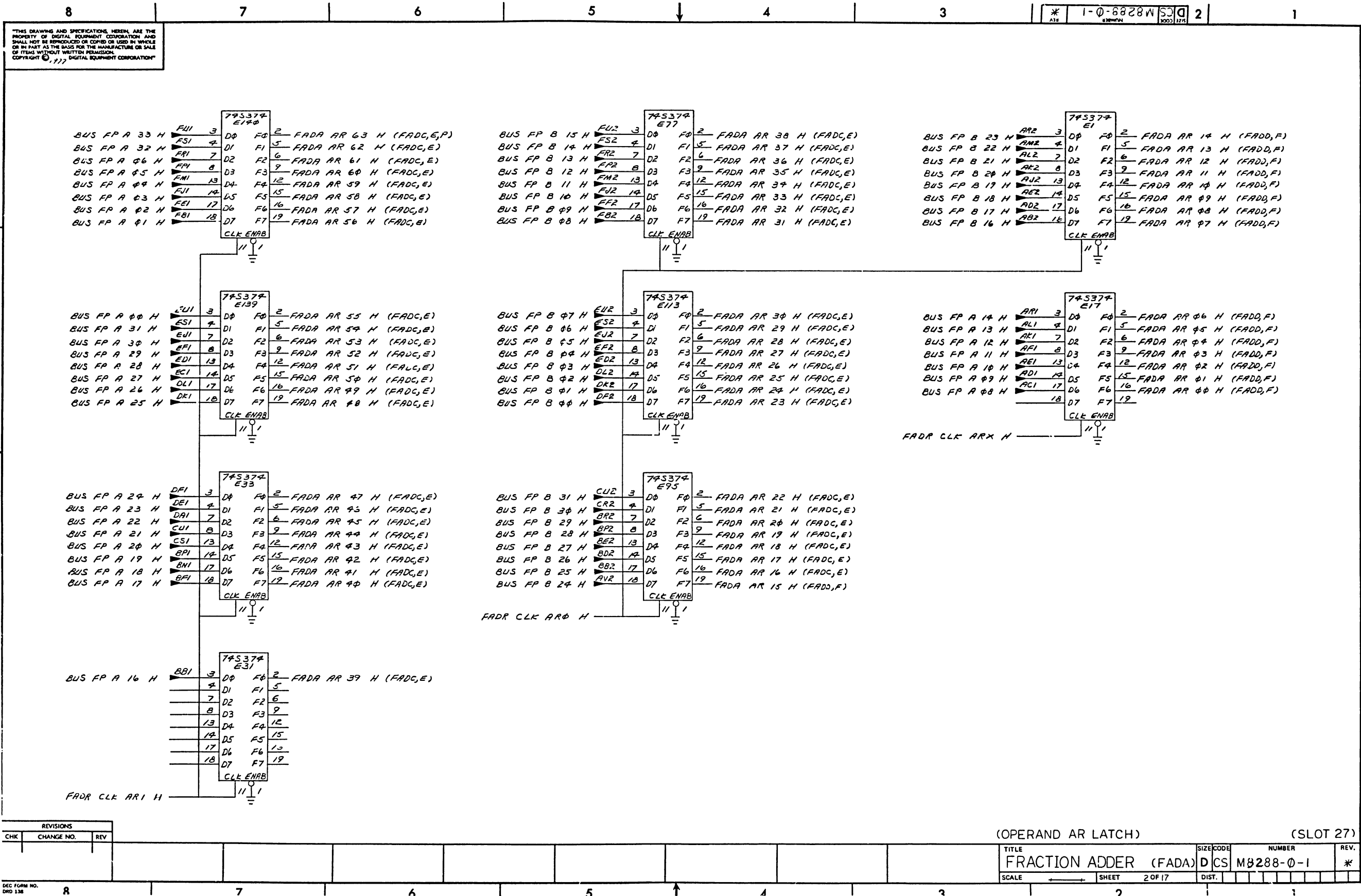
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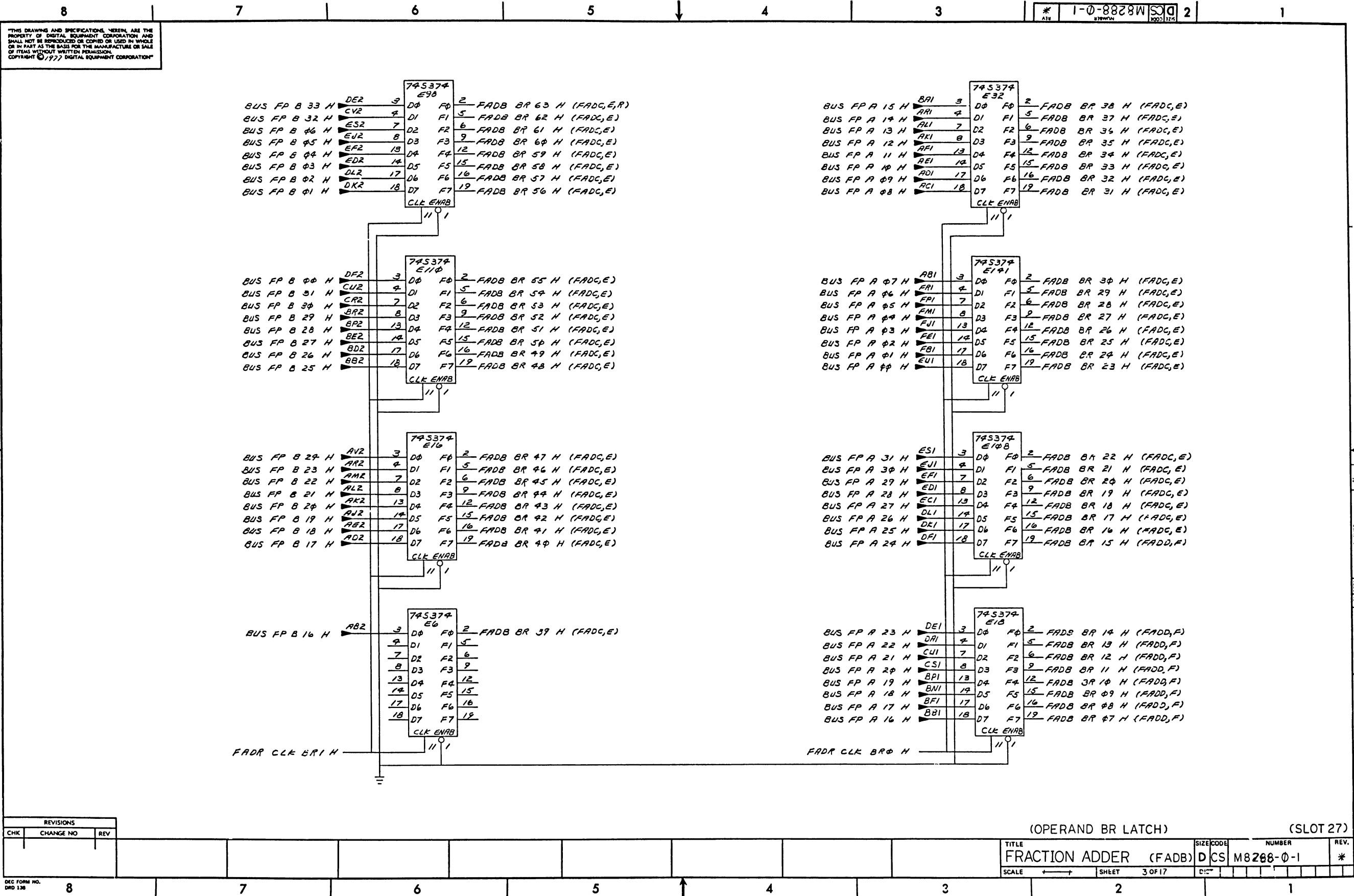
INSERTION PARTS LIST DATA BASE REV

REV.

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* 1-0-2928W S0 2

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FADB BR 63 H — 13 B3 F3 12 — FADC SHFMX 63 H (FADH)
FADA AR 63 H — 14 A3 74S157
FADB BR 62 H — 10 B2 E82 9 — FADC SHFMX 62 H (FADH)
FADA AR 62 H — 11 A2 F2
FADB BR 61 H — 6 B1 F1 7 — FADC SHFMX 61 H (FADH)
FADA AR 61 H — 5 A1
FADB BR 60 H — 3 B0 F0 4 — FADC SHFMX 60 H (FADH)
FADA AR 60 H — 2 A0

S0 STB
1 15

FADB BR 59 H — 13 B3 F3 12 — FADC SHFMX 59 H (FADJ)
FADA AR 59 H — 14 A3 74S157
FADB BR 58 H — 10 B2 E90 9 — FADC SHFMX 58 H (FADJ)
FADA AR 58 H — 11 A2 F2
FADB BR 57 H — 6 B1 F1 7 — FADC SHFMX 57 H (FADJ)
FADA AR 57 H — 5 A1
FADB BR 56 H — 3 B0 F0 4 — FADC SHFMX 56 H (FADJ)
FADA AR 56 H — 2 A0

S0 STB
1 15

FADB BR 55 H — 13 B3 F3 12 — FADC SHFMX 55 H (FADK)
FADA AR 55 H — 14 A3 74S157
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FADB BR 52 H — 3 B0 F0 4 — FADC SHFMX 52 H (FADK)
FADA AR 52 H — 2 A0

S0 STB
1 15

FADB BR 51 H — 13 B3 F3 12 — FADC SHFMX 51 H (FADL)
FADA AR 51 H — 14 A3 74S157
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FADB BR 49 H — 6 B1 F1 7 — FADC SHFMX 49 H (FADL)
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FADB BR 48 H — 3 B0 F0 4 — FADC SHFMX 48 H (FADL)
FADA AR 48 H — 2 A0

S0 STB
1 15

FADP SHFMUX SEL 1 H
FCTN SHFMUX ENI L

REVISIONS

CHK	CHANGE NO	REV

DEC FORM NO.
DWD 138

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FADB BR 47 H — 13 B3 F3 12 — FADC SHFMX 47 H (FADH)
FADA AR 47 H — 14 A3 74S157
FADB BR 46 H — 10 B2 E34 9 — FADC SHFMX 46 H (FADH)
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FADB BR 45 H — 6 B1 F1 7 — FADC SHFMX 45 H (FADH)
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FADA AR 44 H — 2 A0

S0 STB
1 15

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FADA AR 43 H — 14 A3 74S157
FADB BR 42 H — 10 B2 E19 9 — FADC SHFMX 42 H (FADJ)
FADA AR 42 H — 11 A2 F2
FADB BR 41 H — 6 B1 F1 7 — FADC SHFMX 41 H (FADJ)
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FADB BR 40 H — 3 B0 F0 4 — FADC SHFMX 40 H (FADJ)
FADA AR 40 H — 2 A0

S0 STB
1 15

FADB BR 39 H — 13 B3 F3 12 — FADC SHFMX 39 H (FADK)
FADA AR 39 H — 14 A3 74S157
FADB BR 38 H — 10 B2 E47 9 — FADC SHFMX 38 H (FADK)
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FADB BR 37 H — 6 B1 F1 7 — FADC SHFMX 37 H (FADK)
FADA AR 37 H — 5 A1
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FADA AR 36 H — 2 A0

S0 STB
1 15

FADB BR 35 H — 13 B3 F3 12 — FADC SHFMX 35 H (FADL)
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FADB BR 34 H — 10 B2 E99 9 — FADC SHFMX 34 H (FADL)
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FADB BR 33 H — 6 B1 F1 7 — FADC SHFMX 33 H (FADL)
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FADA AR 32 H — 2 A0

S0 STB
1 15

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FADB BR 29 H — 6 B1 F1 7 — FADC SHFMX 29 H (FADH)
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FADA AR 28 H — 2 A0

S0 STB
1 15

FADB BR 27 H — 13 B3 F3 12 — FADC SHFMX 27 H (FADJ)
FADA AR 27 H — 14 A3 74S157
FADB BR 26 H — 10 B2 E128 9 — FADC SHFMX 26 H (FADJ)
FADA AR 26 H — 11 A2 F2
FADB BR 25 H — 6 B1 F1 7 — FADC SHFMX 25 H (FADJ)
FADA AR 25 H — 5 A1
FADB BR 24 H — 3 B0 F0 4 — FADC SHFMX 24 H (FADJ)
FADA AR 24 H — 2 A0

S0 STB
1 15

FADB BR 23 H — 13 B3 F3 12 — FADC SHFMX 23 H (FADK)
FADA AR 23 H — 14 A3 74S157
FADB BR 22 H — 10 B2 E99 9 — FADC SHFMX 22 H (FADK)
FADA AR 22 H — 11 A2 F2
FADB BR 21 H — 6 B1 F1 7 — FADC SHFMX 21 H (FADK)
FADA AR 21 H — 5 A1
FADB BR 20 H — 3 B0 F0 4 — FADC SHFMX 20 H (FADK)
FADA AR 20 H — 2 A0

S0 STB
1 15

FADB BR 19 H — 13 B3 F3 12 — FADC SHFMX 19 H (FADL)
FADA AR 19 H — 14 A3 74S157
FADB BR 18 H — 10 B2 E76 9 — FADC SHFMX 18 H (FADL)
FADA AR 18 H — 11 A2 F2
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FADB BR 16 H — 3 B0 F0 4 — FADC SHFMX 16 H (FADL)
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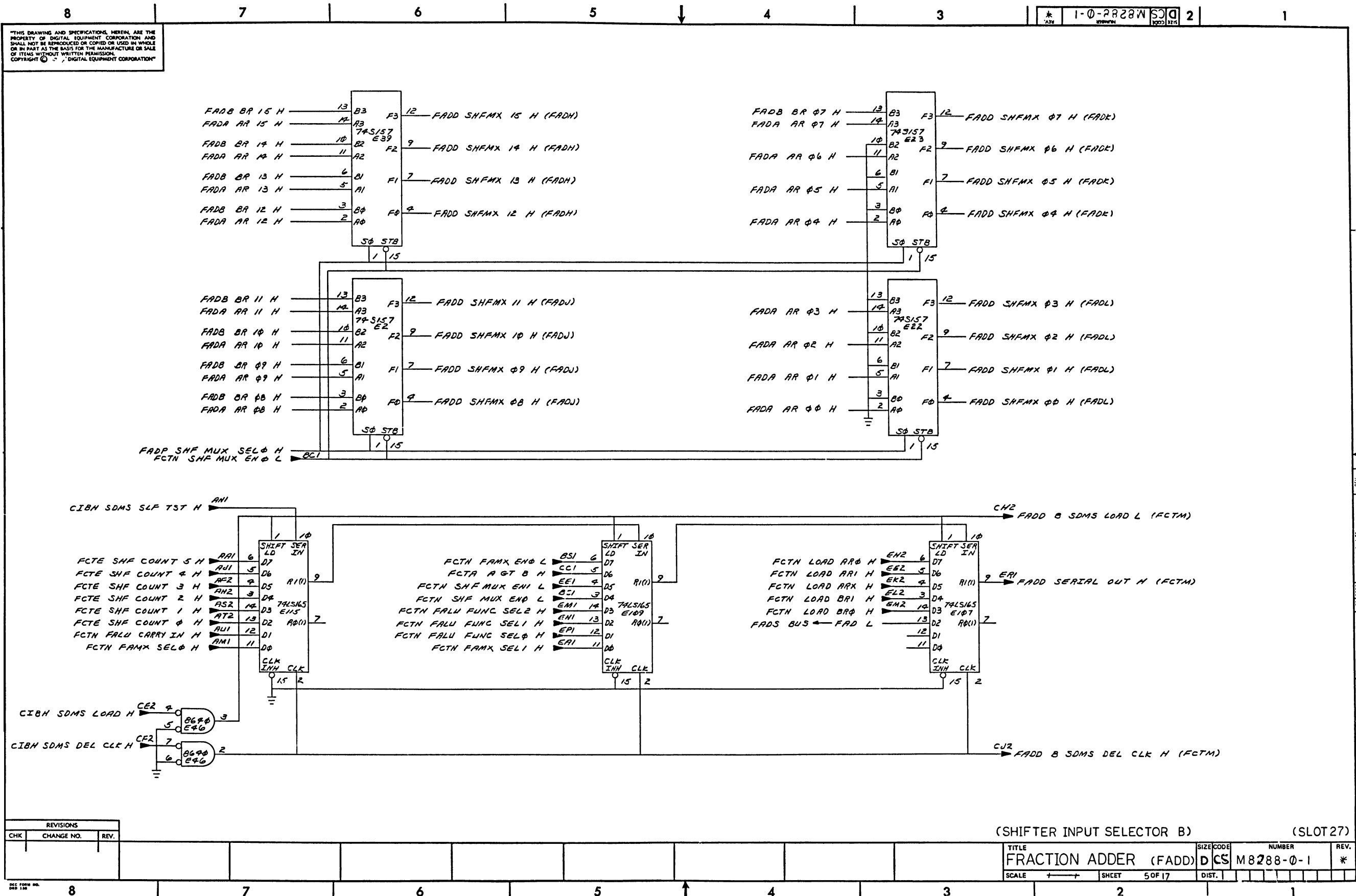
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1 15

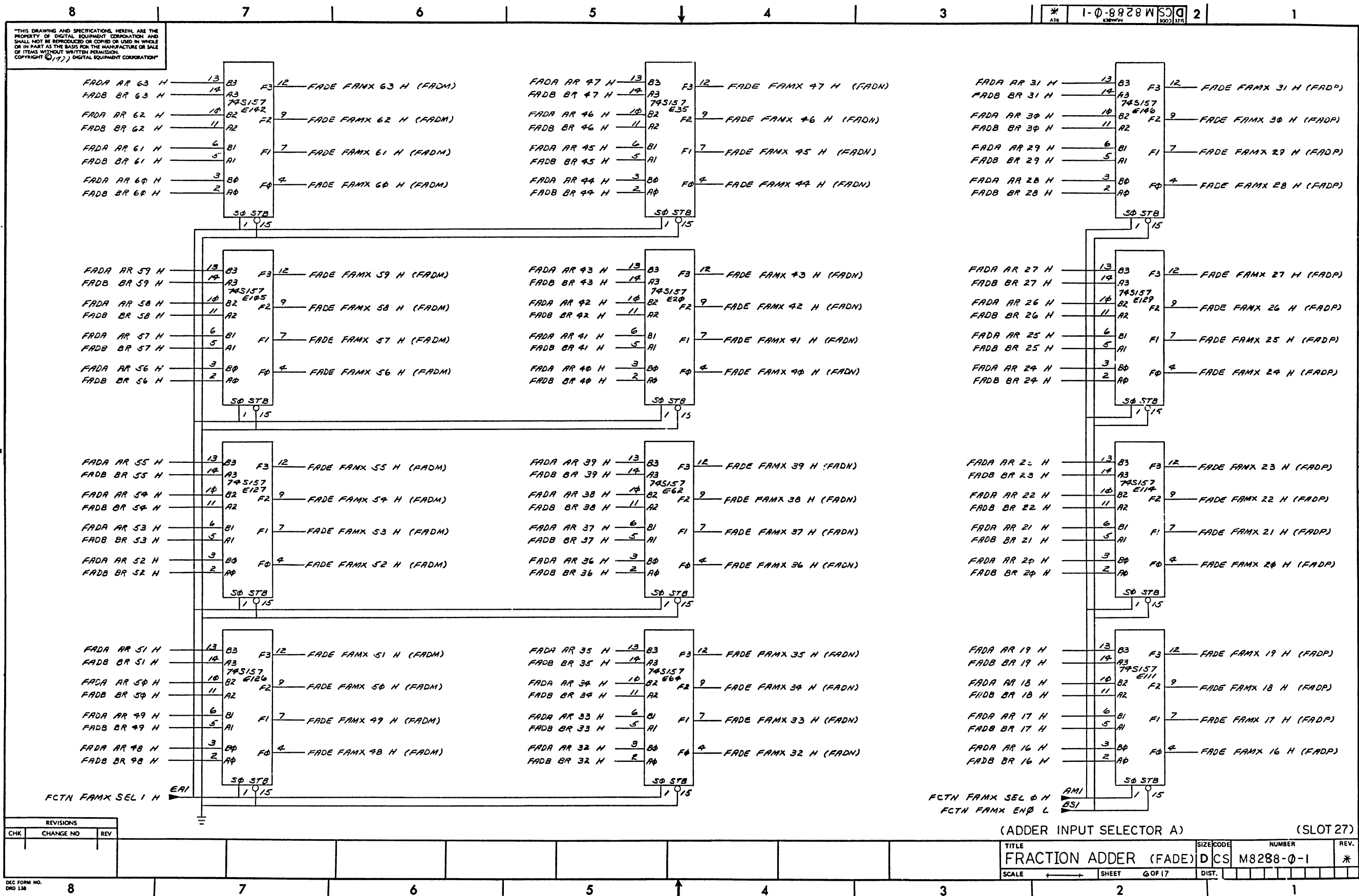
FADP SHFMUX SEL 0 H
FCTN SHFMUX EN0 L

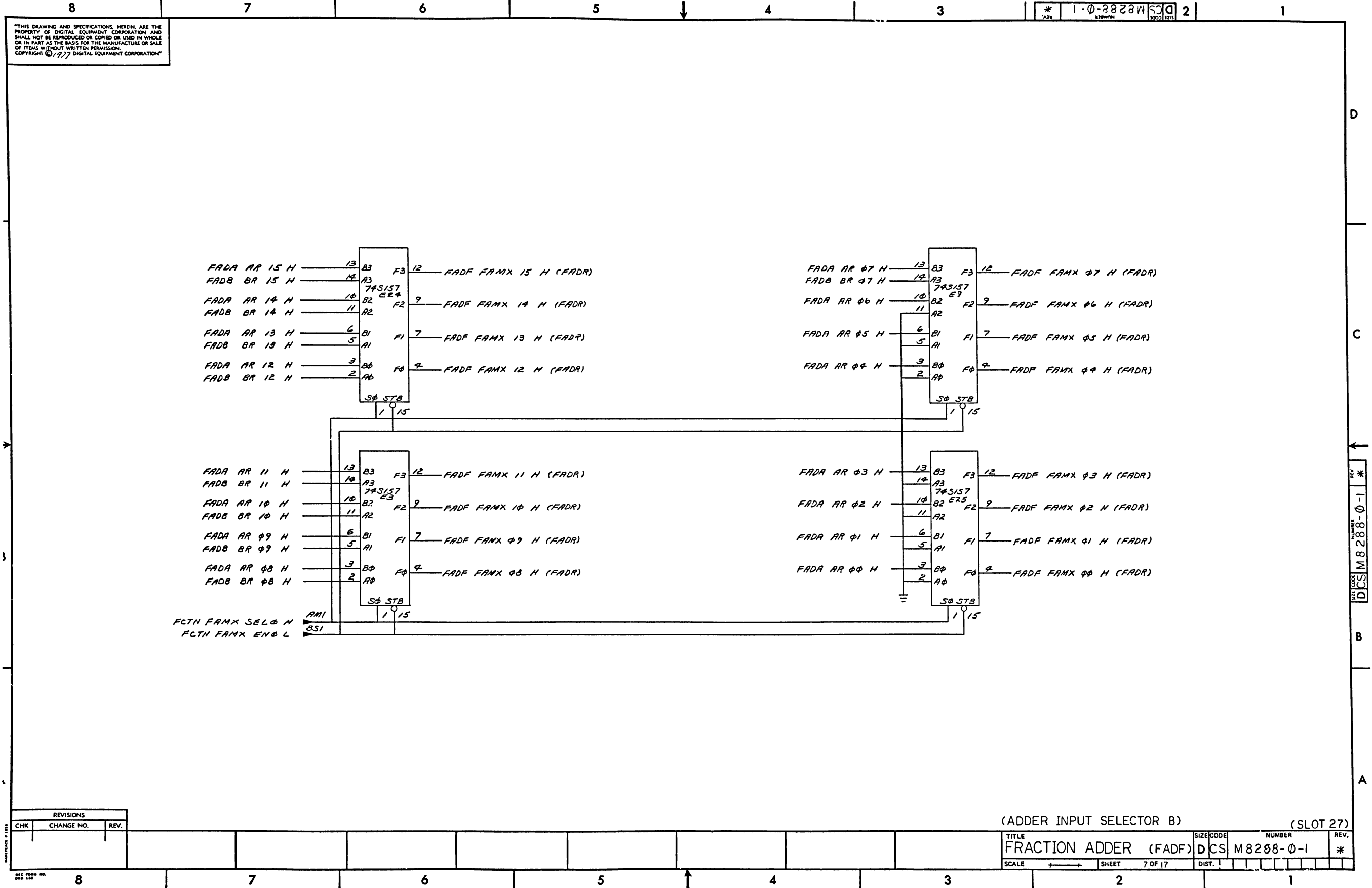
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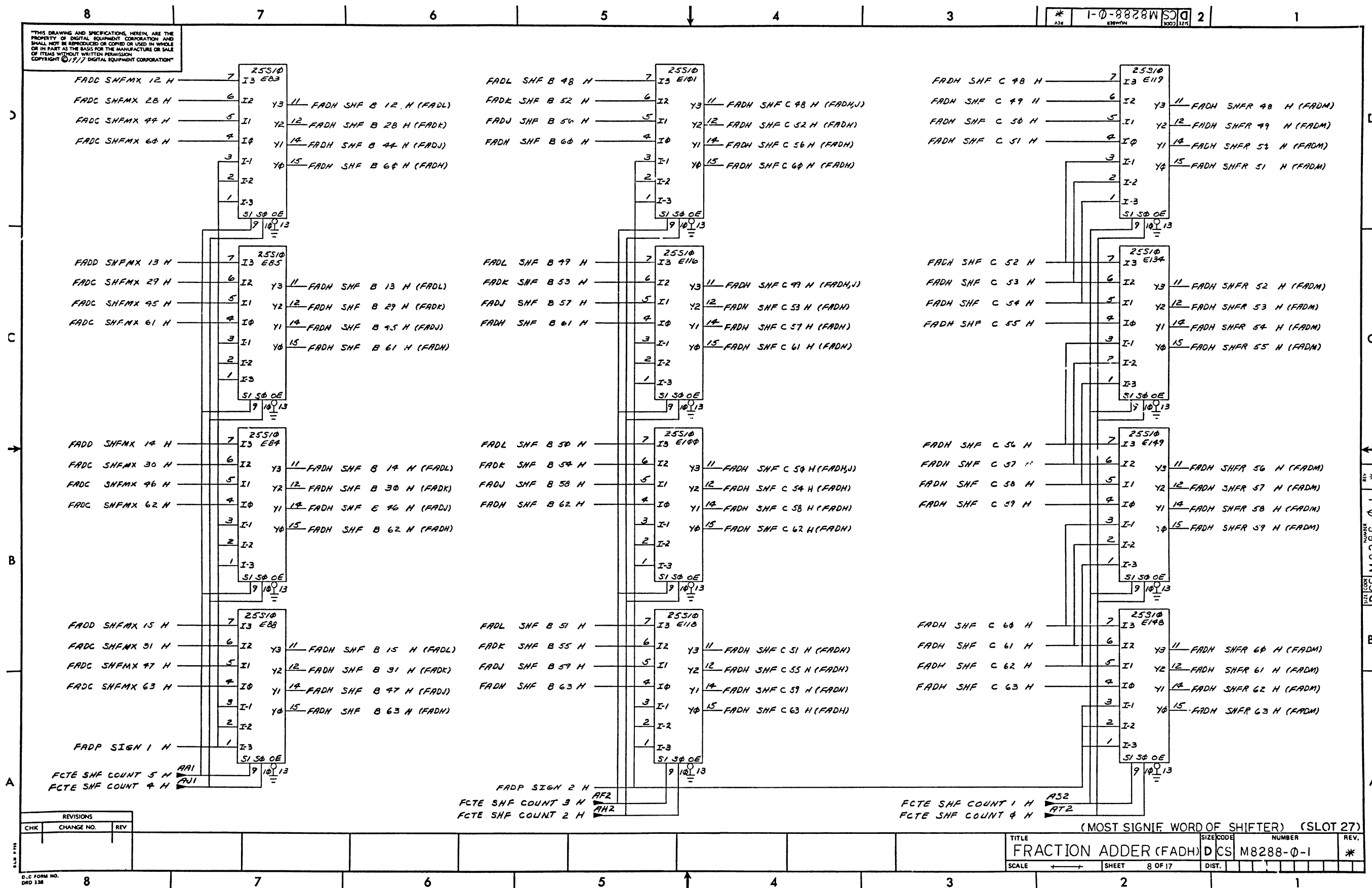
(SLOT 27)

TITLE	SIZE CODE	NUMBER	REV.
FRACTION ADDER (FADC)	D CS	M8288-0-1	*
SCALE	SHEET	4 OF 17	DIST.







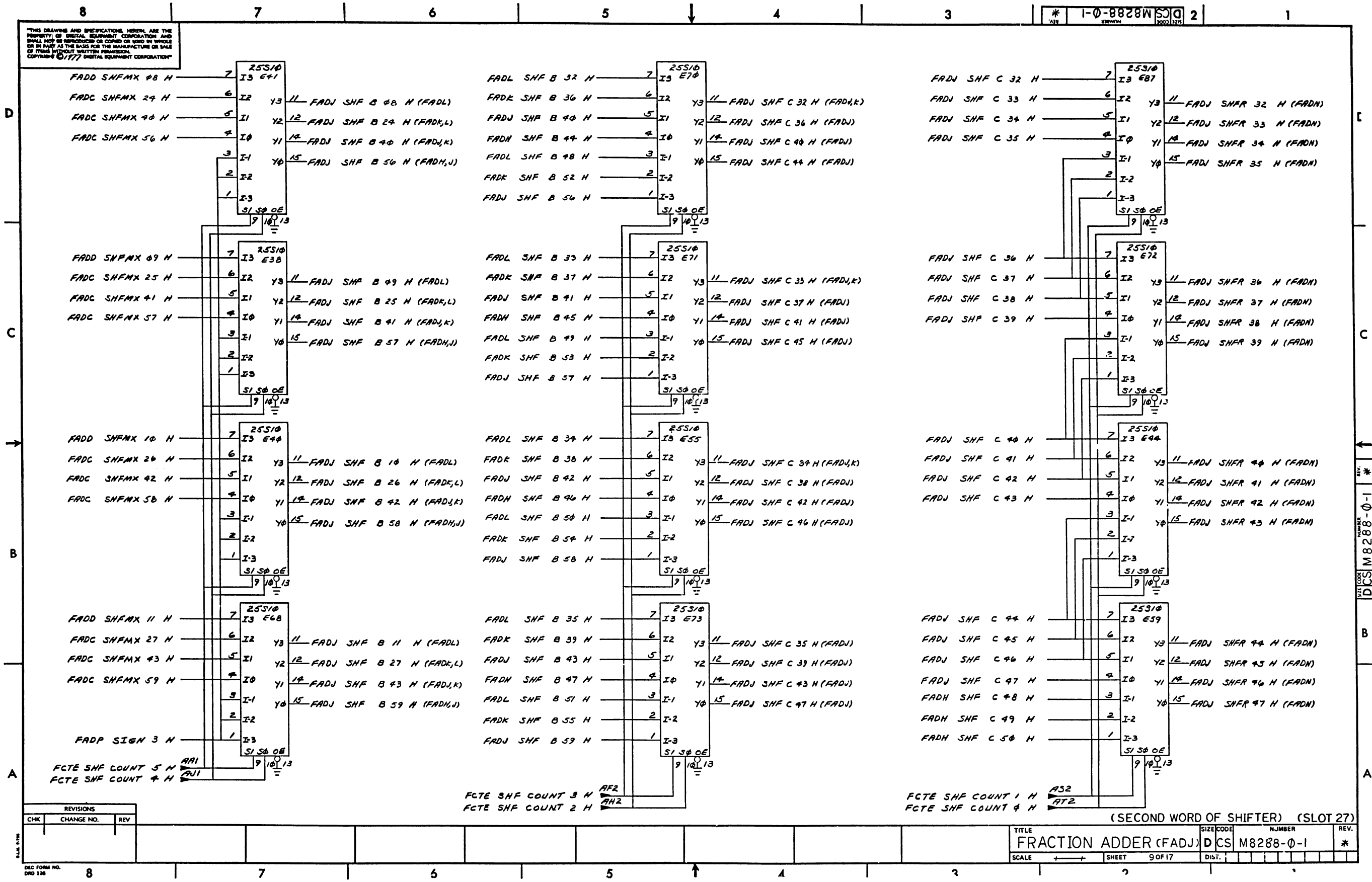


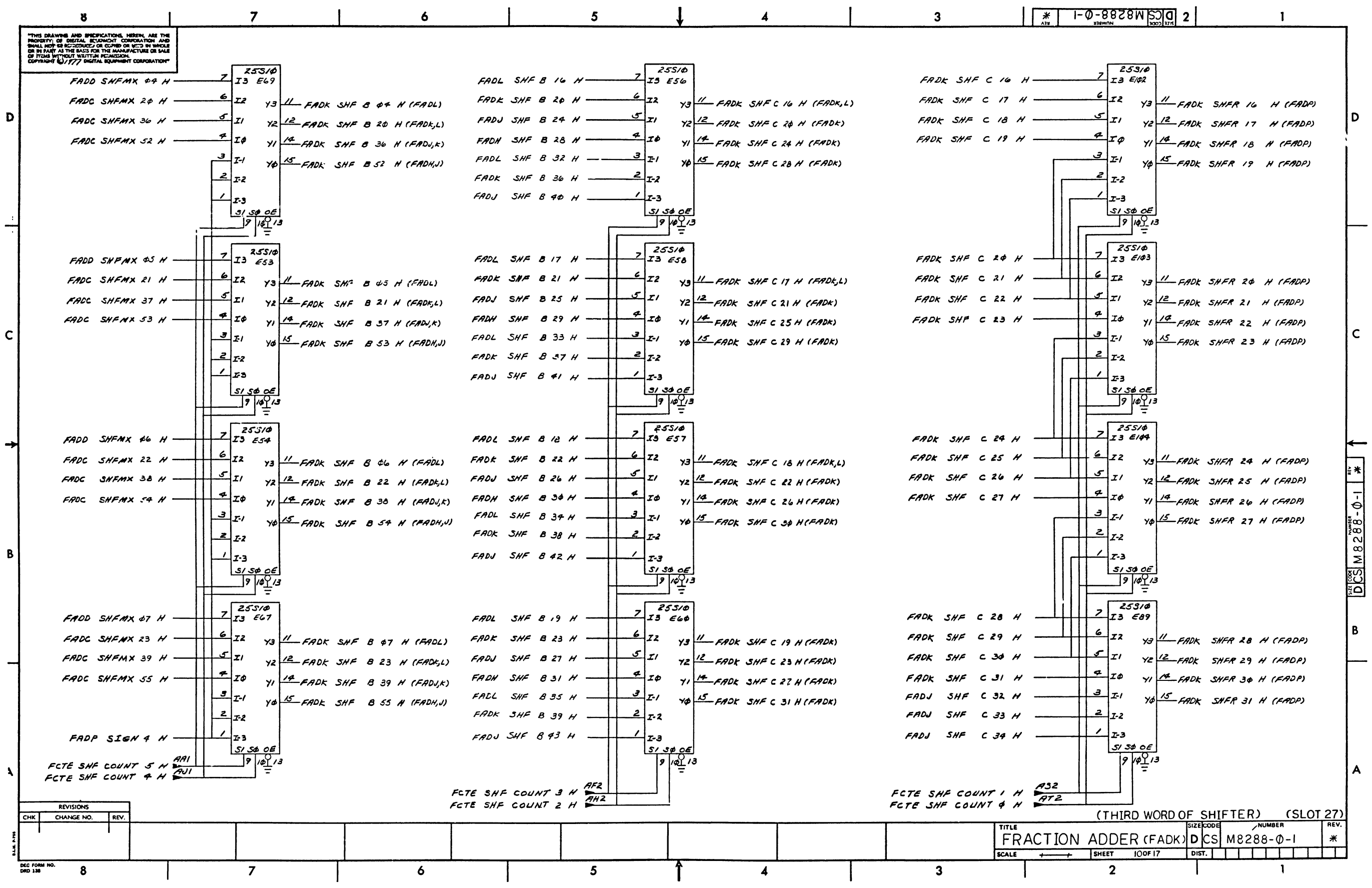
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1-0-8828W

REVISIONS		
CHK	CHANGE NO.	REV

TITLE		SIZE CODE	NUMBER	REV.
FRACTION ADDER (FADH)		DCS	M8288-0-1	*
SCALE	SHEET	DIST.		
	8 OF 17			



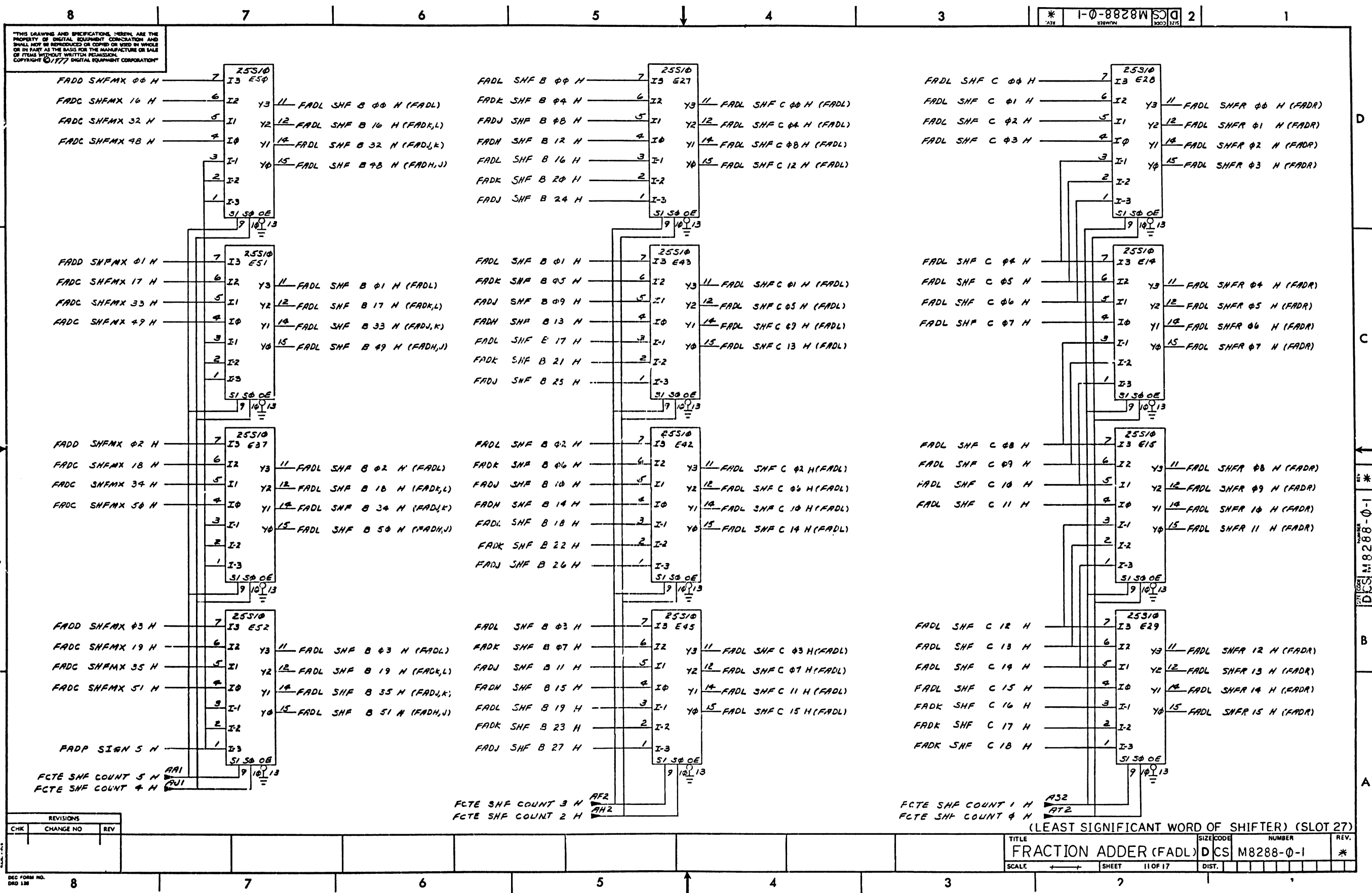


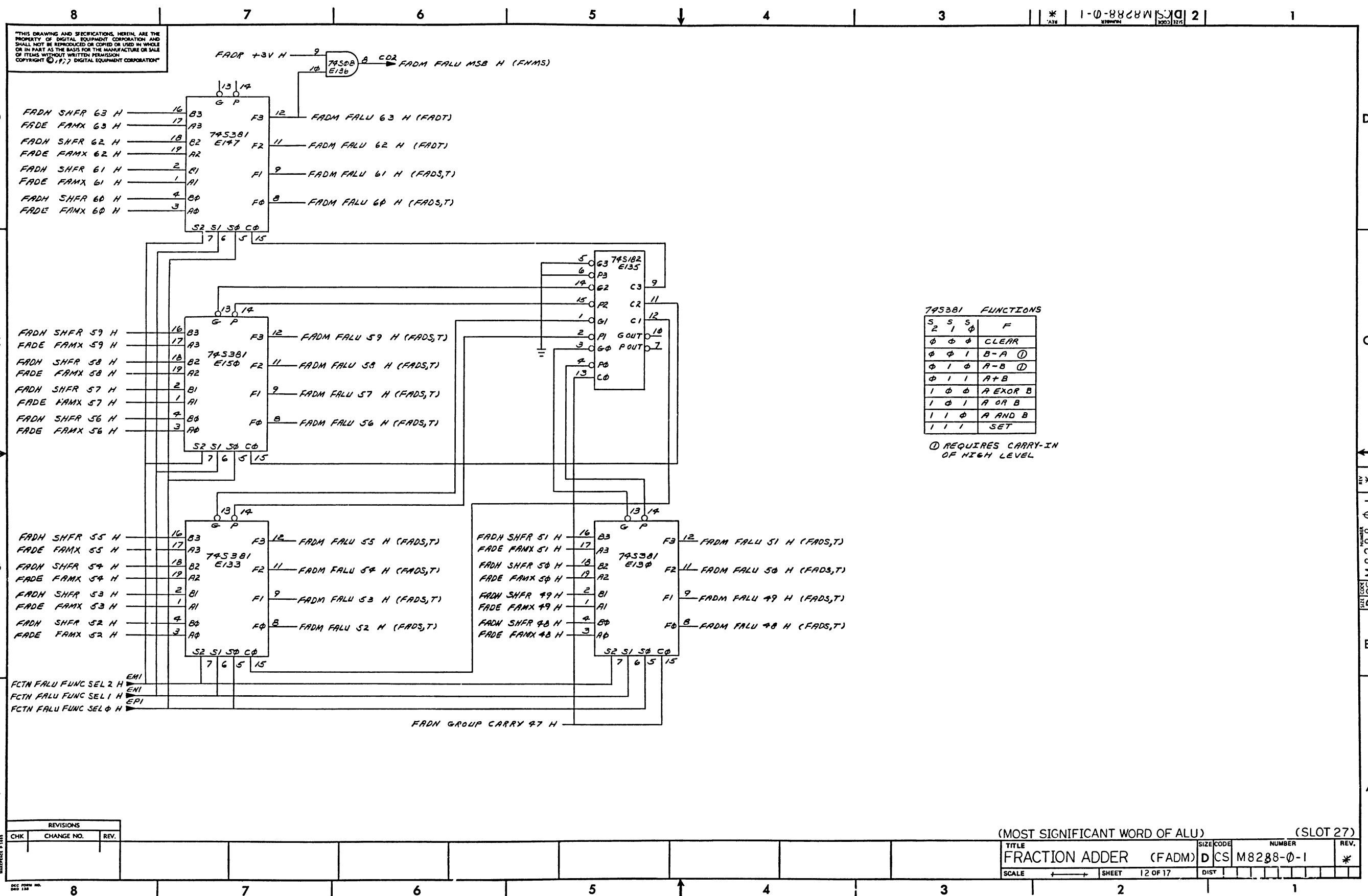
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* I-0-8828W SCS 2

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE		SIZE	CODE	NUMBER	REV.
FRACTION ADDER (FADK)				M8288-0-1	*
SCALE		SHEET	100F 17	DIST.	





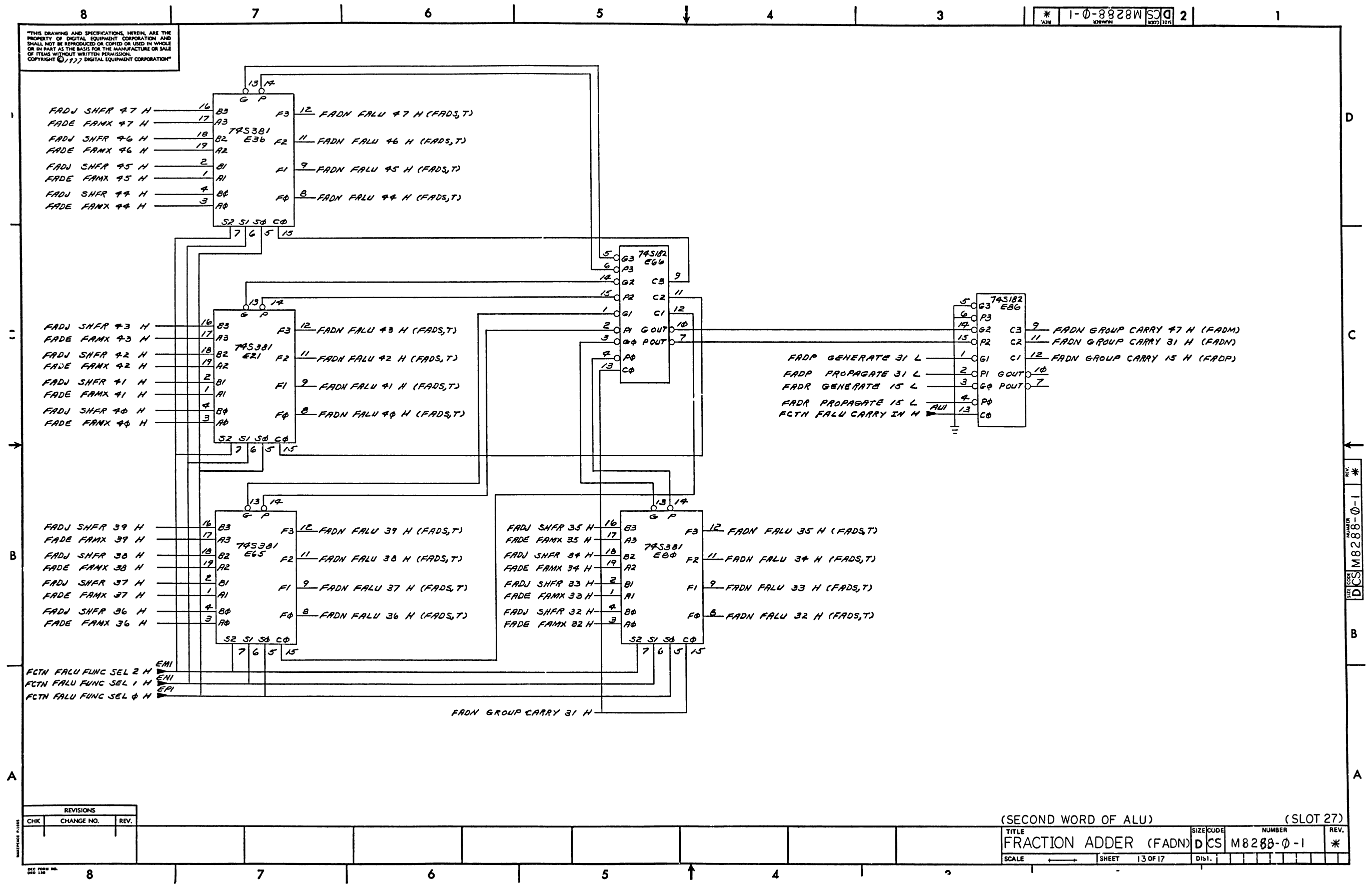
D
C
B
A

REV *
NUMBER
DCS M8288-0-1

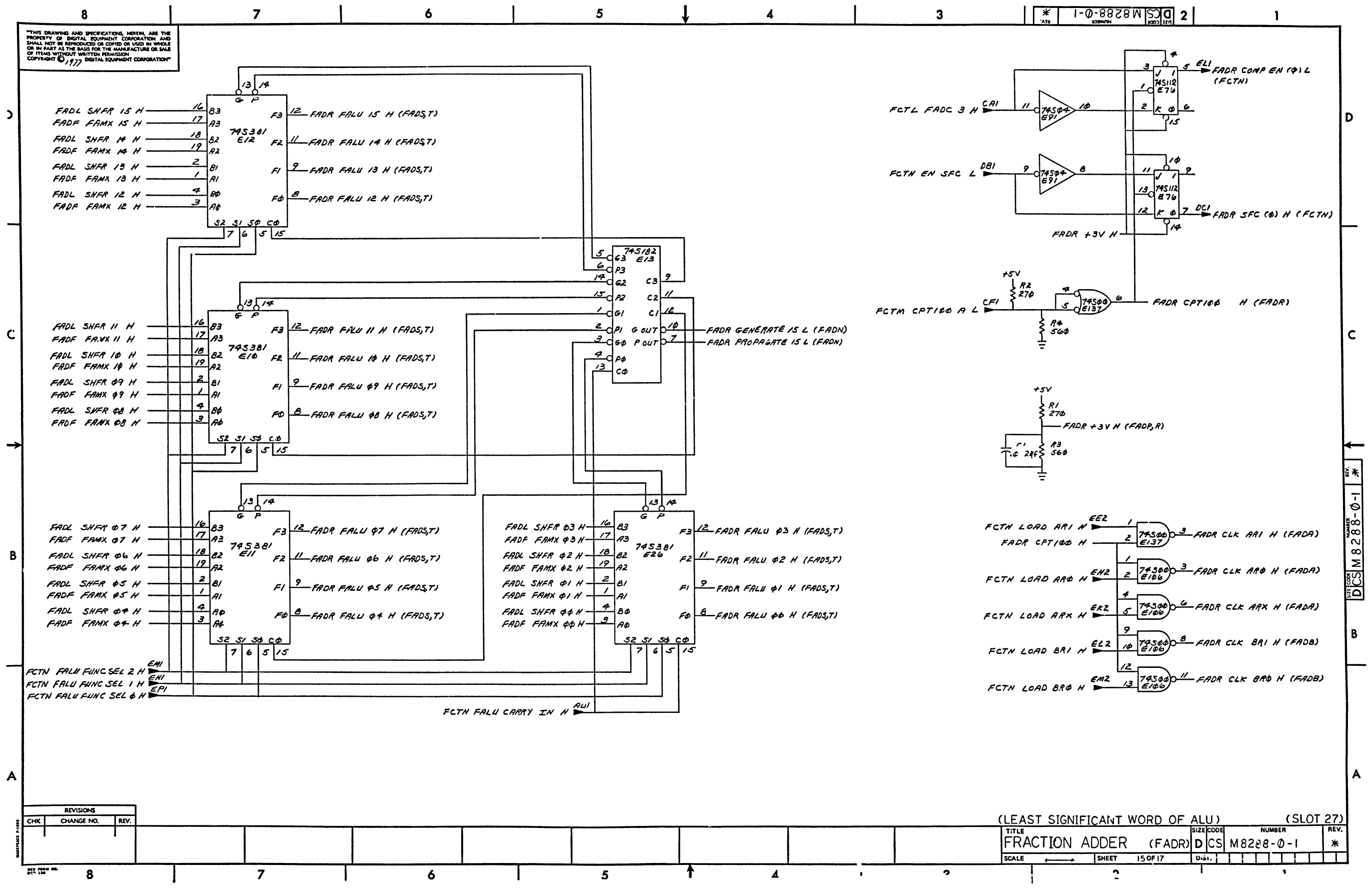
REV.
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REVISIONS		
CHK	CHANGE NO.	REV.

(MOST SIGNIFICANT WORD OF ALU)		(SLOT 27)	
TITLE	SIZE CODE	NUMBER	REV.
FRACTION ADDER (FADM)	DCS	M8288-0-1	*
SCALE	SHEET	DIST	
	12 OF 17		





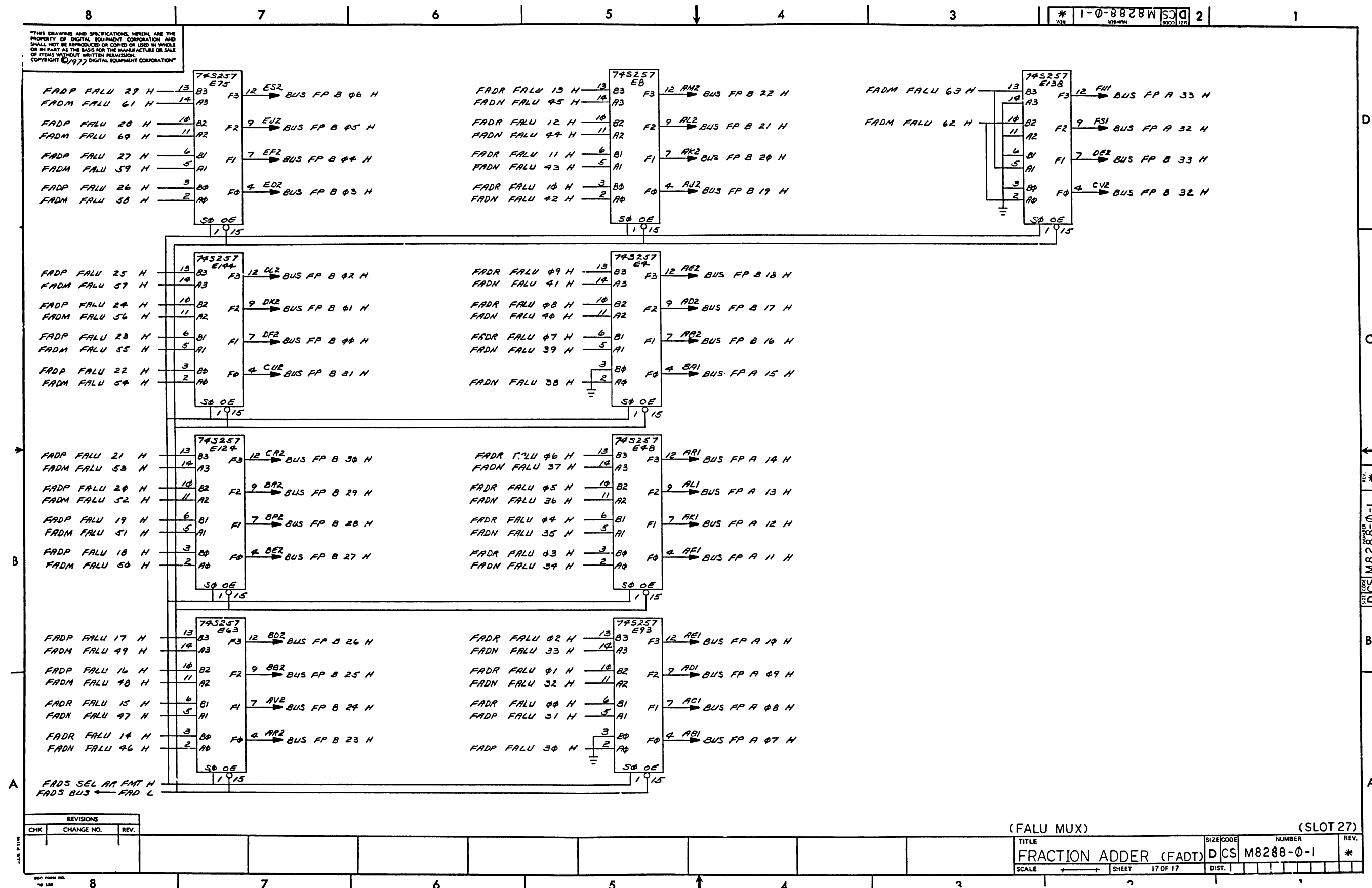


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1-0-88288-0-1

REVISIONS		
CHK	CHANGE NO.	REV.

(LEAST SIGNIFICANT WORD OF ALU)			(SLOT 27)		
TITLE	SIZE CODE	NUMBER	REV.		
FRACTION ADDER (FADR)	D	CS M8288-0-1	*		
SCALE	SHEET	15 OF 17	Dist.		



WIRE ADDS SIDE 1:
O-1 FROM FEED THRU ABOVE E58-8
TO FEED THRU ABOVE E75-9

5-2B ADD Eb DEC P/N 19-10536-00

WIRE ADDS SIDE 1:

5-78 FROM SPARE LOCATION E6-10 TO E6-7

5-48 E28-10 TO E6-3

5-58 E28-9 TO E6-4

5-68 E6-8 TO E6-5

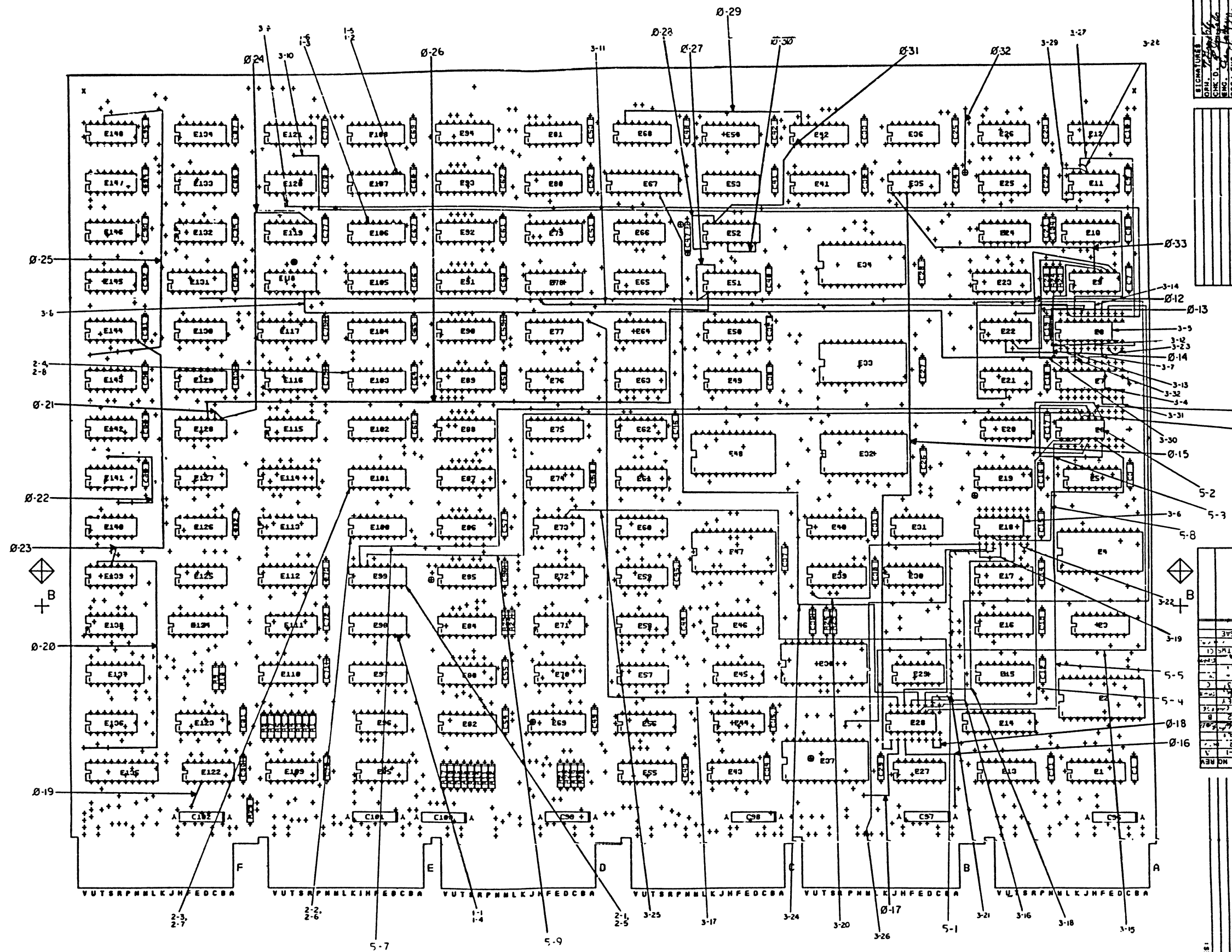
5-7B E85-15 TO E6-11

5-88 E6-6 TO E18-3

5 - 9B E85-14 TO E6 - 9

5-108 E6-9 TO E6-10

		DESCRIPTION		DRAWING NO.		DATE	
		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES					
		QUANTITY		DRAWING NO.		DATE	
		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES					
		SURFACE FINISH		DRAWING NO.		DATE	
		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES					
		MATERIAL		DRAWING NO.		DATE	
		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES					
		FINISH		DRAWING NO.		DATE	
		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES					
		SCALE		DRAWING NO.		DATE	
		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES					
		SHEET		DRAWING NO.		DATE	
		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES					

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0-13

5-10
5-2
5-3
5-8

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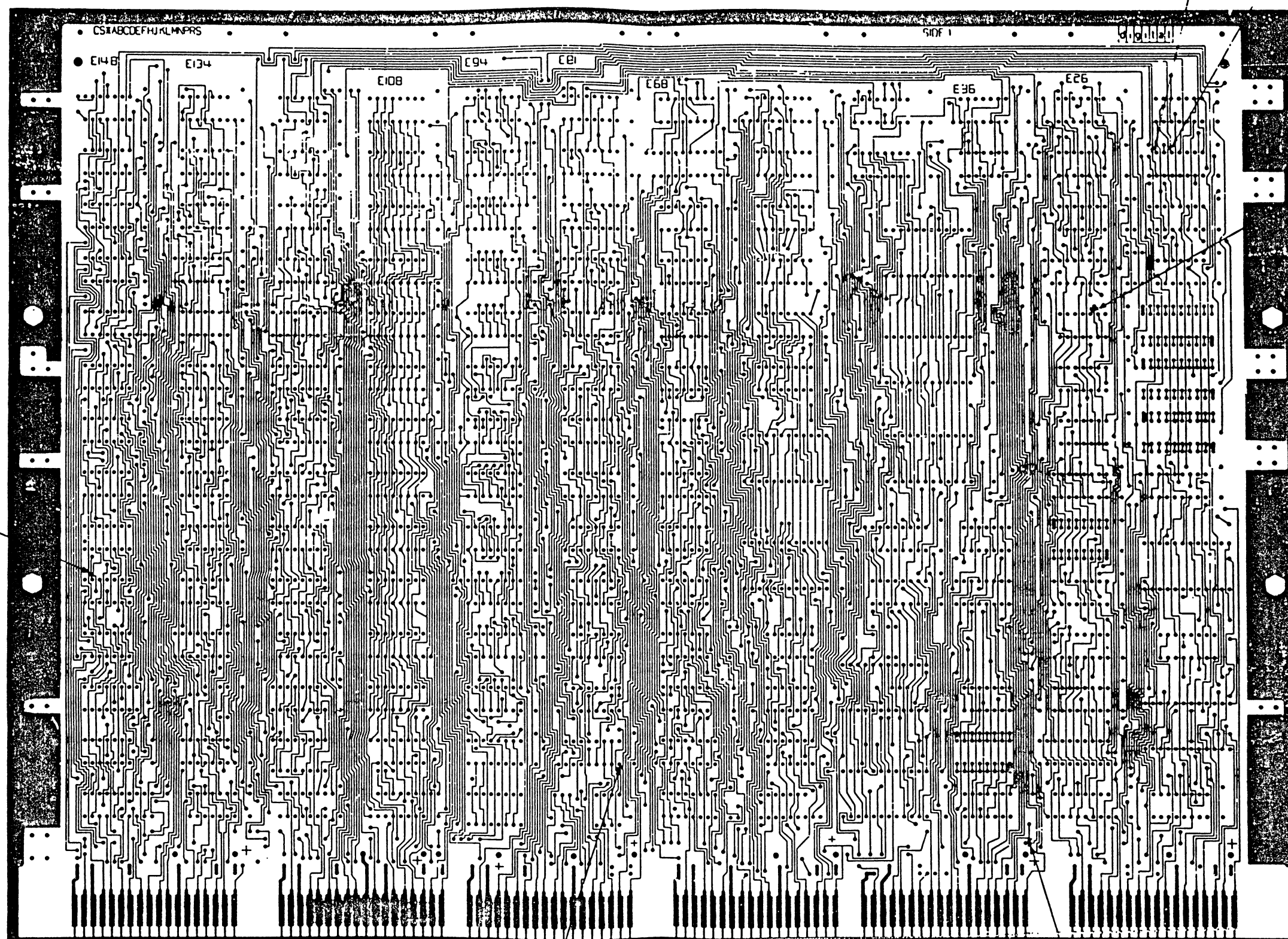
NOTES:

M8289-0-0

EUA M8289-0-0

• *Self-Defense* — The defendant must have been the first aggressor and the victim must have used excessive force.

5013090A M8289 LAYER 1

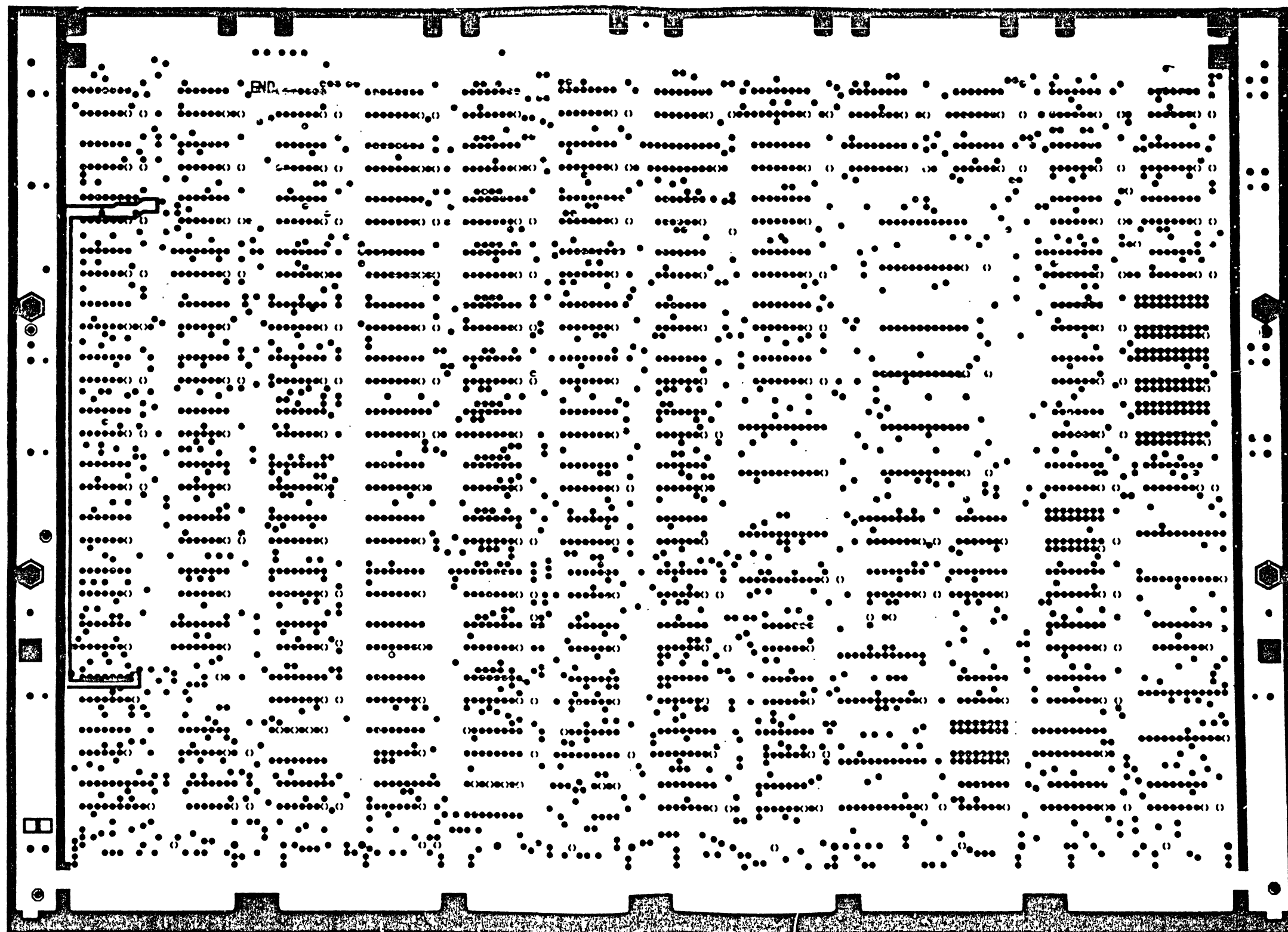


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SCALE	2-1	SHEET	2	OF	6	DATE			

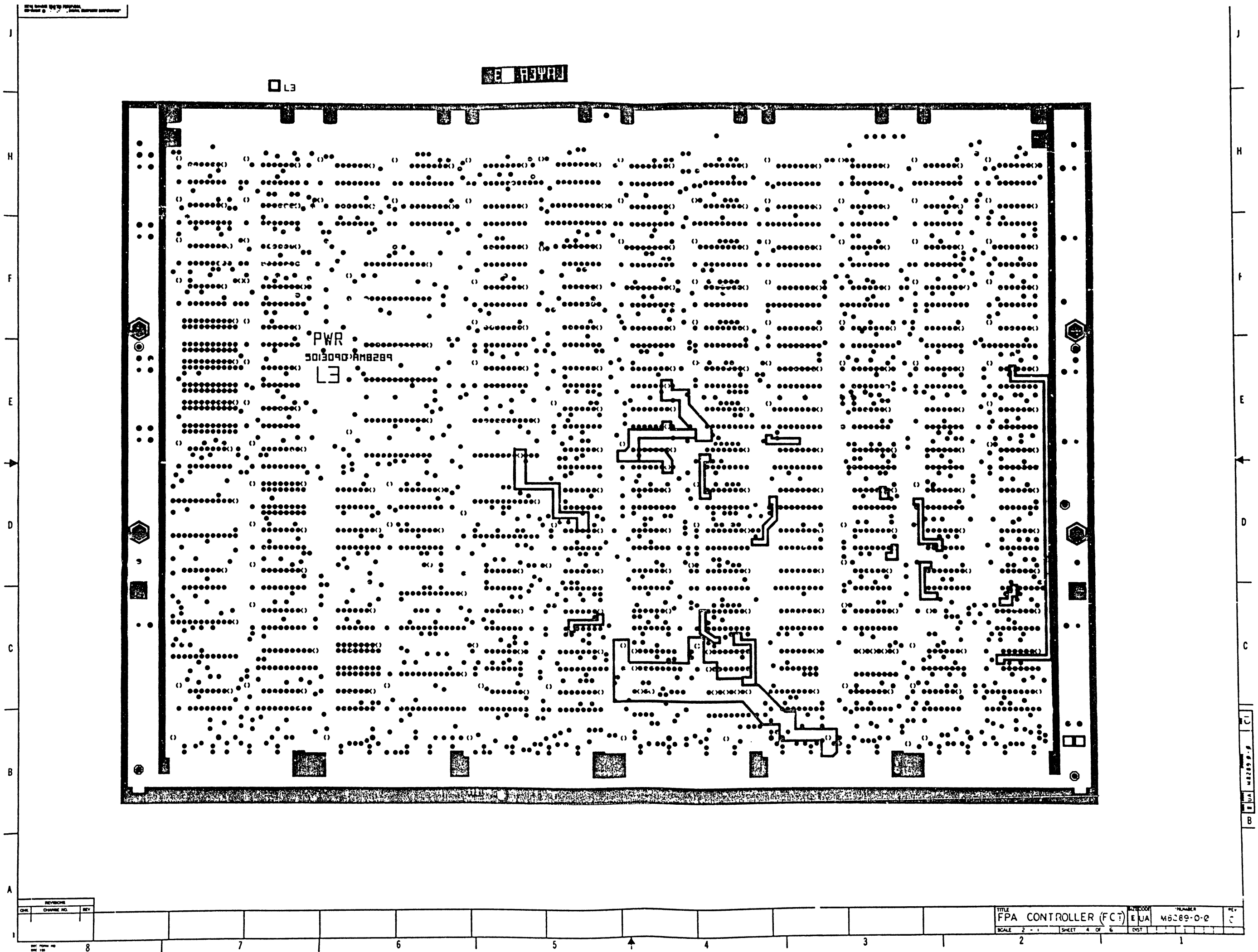
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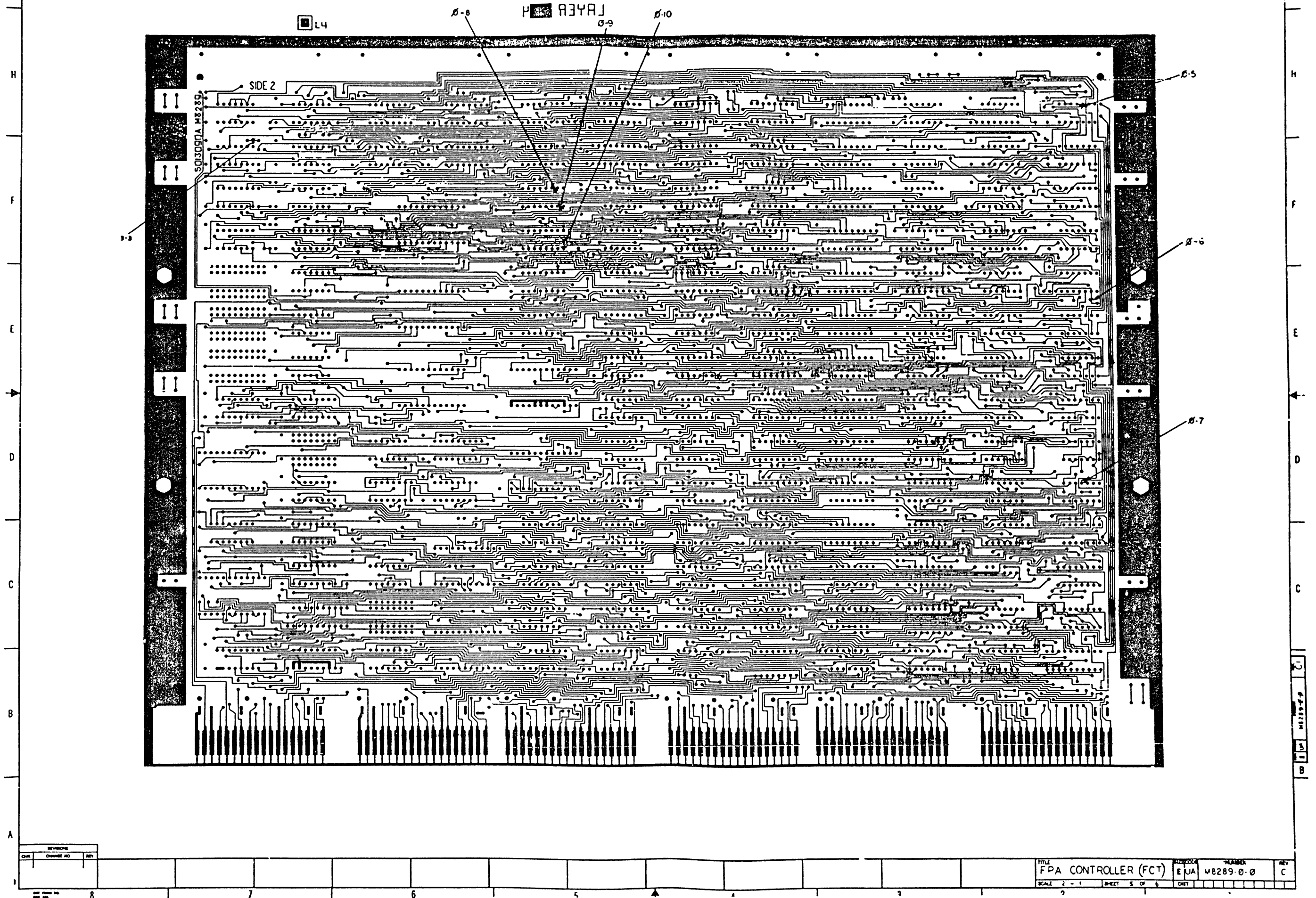
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CHK	OWNER NO.	REV

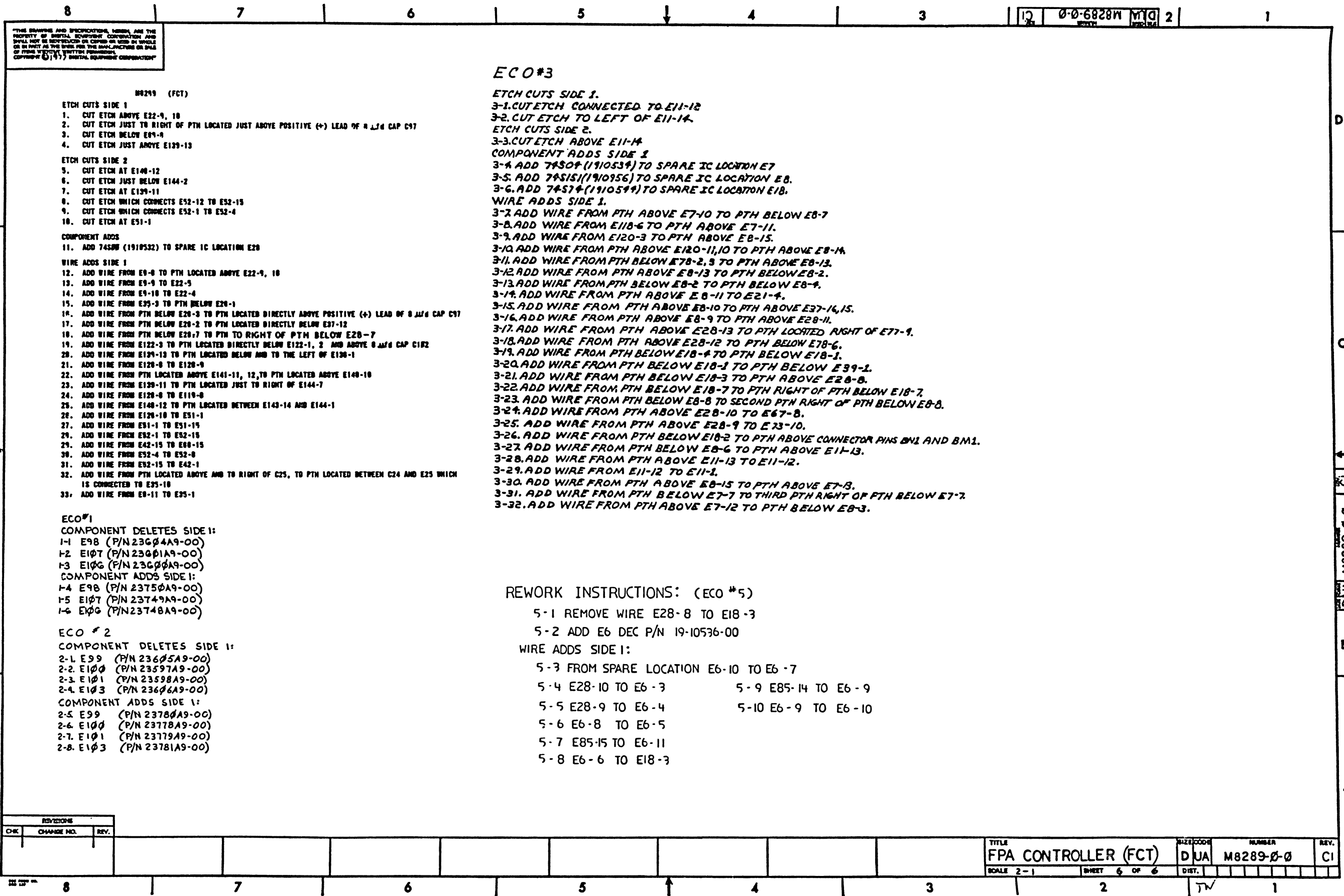
TITLE FPA CONTROLLER (FCT)		PROJECT EUA	REV. NO. M8289-D-0		REV. C
SCALE 2 - 1	SHEET 3 OF 6	DIST.			



REVISIONS		
REV	DATE	DESCRIPTION
1		

TITLE		DRAWING		NUMBER		REV
FPA CONTROLLER (FCT)		EUA		M6289-0-2		C
SCALE	2 - 1	SHEET	4 OF 6	DIST		
2		1				





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M8289 (FCT)

ETCH CUTS SIDE 1

1. CUT ETCH ABOVE E22-9, 10
2. CUT ETCH JUST TO RIGHT OF PTH LOCATED JUST ABOVE POSITIVE (+) LEAD OF R 1/4 CAP C97
3. CUT ETCH BELOW E89-1
4. CUT ETCH JUST ABOVE E139-13

ETCH CUTS SIDE 2

5. CUT ETCH AT E140-12
6. CUT ETCH JUST BELOW E144-2
7. CUT ETCH AT E139-11
8. CUT ETCH WHICH CONNECTS E52-12 TO E52-15
9. CUT ETCH WHICH CONNECTS E52-1 TO E52-4
10. CUT ETCH AT E51-1

COMPONENT ADDS

11. ADD 74504 (1910532) TO SPARE IC LOCATION E28

WIRE ADDS SIDE 1

12. ADD WIRE FROM E9-8 TO PTH LOCATED ABOVE E22-9, 10
13. ADD WIRE FROM E9-9 TO E22-5
14. ADD WIRE FROM E9-10 TO E22-4
15. ADD WIRE FROM E35-3 TO PTH BELOW E20-1
16. ADD WIRE FROM PTH BELOW E20-3 TO PTH LOCATED DIRECTLY ABOVE POSITIVE (+) LEAD OF R 1/4 CAP C97
17. ADD WIRE FROM PTH BELOW E20-2 TO PTH LOCATED DIRECTLY BELOW E37-12
18. ADD WIRE FROM PTH BELOW E20-7 TO PTH TO RIGHT OF PTH BELOW E20-7
19. ADD WIRE FROM E122-3 TO PTH LOCATED DIRECTLY BELOW E122-1, 2 AND ABOVE R 1/4 CAP C182
20. ADD WIRE FROM E139-13 TO PTH LOCATED BELOW AND TO THE LEFT OF E130-1
21. ADD WIRE FROM E120-8 TO E120-9
22. ADD WIRE FROM PTH LOCATED ABOVE E141-11, 12 TO PTH LOCATED ABOVE E140-10
23. ADD WIRE FROM E139-11 TO PTH LOCATED JUST TO RIGHT OF E144-7
24. ADD WIRE FROM E120-8 TO E110-8
25. ADD WIRE FROM E140-12 TO PTH LOCATED BETWEEN E143-14 AND E144-1
26. ADD WIRE FROM E120-10 TO E51-1
27. ADD WIRE FROM E51-1 TO E51-15
28. ADD WIRE FROM E52-1 TO E52-15
29. ADD WIRE FROM E42-15 TO E68-15
30. ADD WIRE FROM E52-4 TO E52-8
31. ADD WIRE FROM E52-15 TO E42-1
32. ADD WIRE FROM PTH LOCATED ABOVE AND TO RIGHT OF C25, TO PTH LOCATED BETWEEN C24 AND E25 WHICH IS CONNECTED TO E35-10
33. ADD WIRE FROM E9-11 TO E35-1

ECO #1

COMPONENT DELETES SIDE 1:

- 1-1 E98 (P/N 23604A9-00)
- 1-2 E107 (P/N 23601A9-00)
- 1-3 E106 (P/N 23600A9-00)

COMPONENT ADDS SIDE 1:

- 1-4 E98 (P/N 23750A9-00)
- 1-5 E107 (P/N 23749A9-00)
- 1-6 E106 (P/N 23748A9-00)

ECO #2

COMPONENT DELETES SIDE 1:

- 2-1 E99 (P/N 23605A9-00)
- 2-2 E100 (P/N 23597A9-00)
- 2-3 E101 (P/N 23598A9-00)
- 2-4 E103 (P/N 23606A9-00)

COMPONENT ADDS SIDE 1:

- 2-5 E99 (P/N 23780A9-00)
- 2-6 E100 (P/N 23778A9-00)
- 2-7 E101 (P/N 23779A9-00)
- 2-8 E103 (P/N 23781A9-00)

ECO #3

ETCH CUTS SIDE 1.

- 3-1. CUT ETCH CONNECTED TO E11-12
- 3-2. CUT ETCH TO LEFT OF E11-14.

ETCH CUTS SIDE 2.

- 3-3. CUT ETCH ABOVE E11-14

COMPONENT ADDS SIDE 1

- 3-4. ADD 74504 (1910534) TO SPARE IC LOCATION E7
- 3-5. ADD 745151 (1910956) TO SPARE IC LOCATION E8.
- 3-6. ADD 74574 (1910544) TO SPARE IC LOCATION E18.

WIRE ADDS SIDE 1.

- 3-7. ADD WIRE FROM PTH ABOVE E7-10 TO PTH BELOW E8-7
- 3-8. ADD WIRE FROM E118-6 TO PTH ABOVE E7-11.
- 3-9. ADD WIRE FROM E120-3 TO PTH ABOVE E8-15.
- 3-10. ADD WIRE FROM PTH ABOVE E120-11, 10 TO PTH ABOVE E8-14.
- 3-11. ADD WIRE FROM PTH BELOW E78-2, 5 TO PTH ABOVE E8-13.
- 3-12. ADD WIRE FROM PTH ABOVE E8-13 TO PTH BELOW E8-2.
- 3-13. ADD WIRE FROM PTH BELOW E8-2 TO PTH BELOW E8-4.
- 3-14. ADD WIRE FROM PTH ABOVE E8-11 TO E21-4.
- 3-15. ADD WIRE FROM PTH ABOVE E8-10 TO PTH ABOVE E37-14, 15.
- 3-16. ADD WIRE FROM PTH ABOVE E8-9 TO PTH ABOVE E28-11.
- 3-17. ADD WIRE FROM PTH ABOVE E28-13 TO PTH LOCATED RIGHT OF E77-9.
- 3-18. ADD WIRE FROM PTH ABOVE E28-12 TO PTH BELOW E78-6.
- 3-19. ADD WIRE FROM PTH BELOW E18-4 TO PTH BELOW E18-1.
- 3-20. ADD WIRE FROM PTH BELOW E18-1 TO PTH BELOW E39-1.
- 3-21. ADD WIRE FROM PTH BELOW E18-3 TO PTH ABOVE E28-8.
- 3-22. ADD WIRE FROM PTH BELOW E18-7 TO PTH RIGHT OF PTH BELOW E18-7.
- 3-23. ADD WIRE FROM PTH BELOW E8-8 TO SECOND PTH RIGHT OF PTH BELOW E8-8.
- 3-24. ADD WIRE FROM PTH ABOVE E28-10 TO E67-8.
- 3-25. ADD WIRE FROM PTH ABOVE E28-9 TO E23-10.
- 3-26. ADD WIRE FROM PTH BELOW E18-2 TO PTH ABOVE CONNECTOR PINS BM1 AND BM1.
- 3-27. ADD WIRE FROM PTH BELOW E8-6 TO PTH ABOVE E11-13.
- 3-28. ADD WIRE FROM PTH ABOVE E11-13 TO E11-12.
- 3-29. ADD WIRE FROM E11-12 TO E11-1.
- 3-30. ADD WIRE FROM PTH ABOVE E8-15 TO PTH ABOVE E7-3.
- 3-31. ADD WIRE FROM PTH BELOW E7-7 TO THIRD PTH RIGHT OF PTH BELOW E7-7.
- 3-32. ADD WIRE FROM PTH ABOVE E7-12 TO PTH BELOW E8-3.

REWORK INSTRUCTIONS: (ECO #5)

- 5-1 REMOVE WIRE E28-8 TO E18-3
- 5-2 ADD E6 DEC P/N 19-10536-00

WIRE ADDS SIDE 1:

- 5-3 FROM SPARE LOCATION E6-10 TO E6-7
- 5-4 E28-10 TO E6-3
- 5-5 E28-9 TO E6-4
- 5-6 E6-8 TO E6-5
- 5-7 E85-15 TO E6-11
- 5-8 E6-6 TO E18-3
- 5-9 E85-14 TO E6-9
- 5-10 E6-9 TO E6-10

REVISIONS									TITLE		SIZE/CODE	NUMBER	REV.
CHK	CHANGE NO.	REV.							FPA CONTROLLER (FCT)		DJA	M8289-0-0	CI
									SCALE 2-1		SHEET 6 OF 6	DIST.	

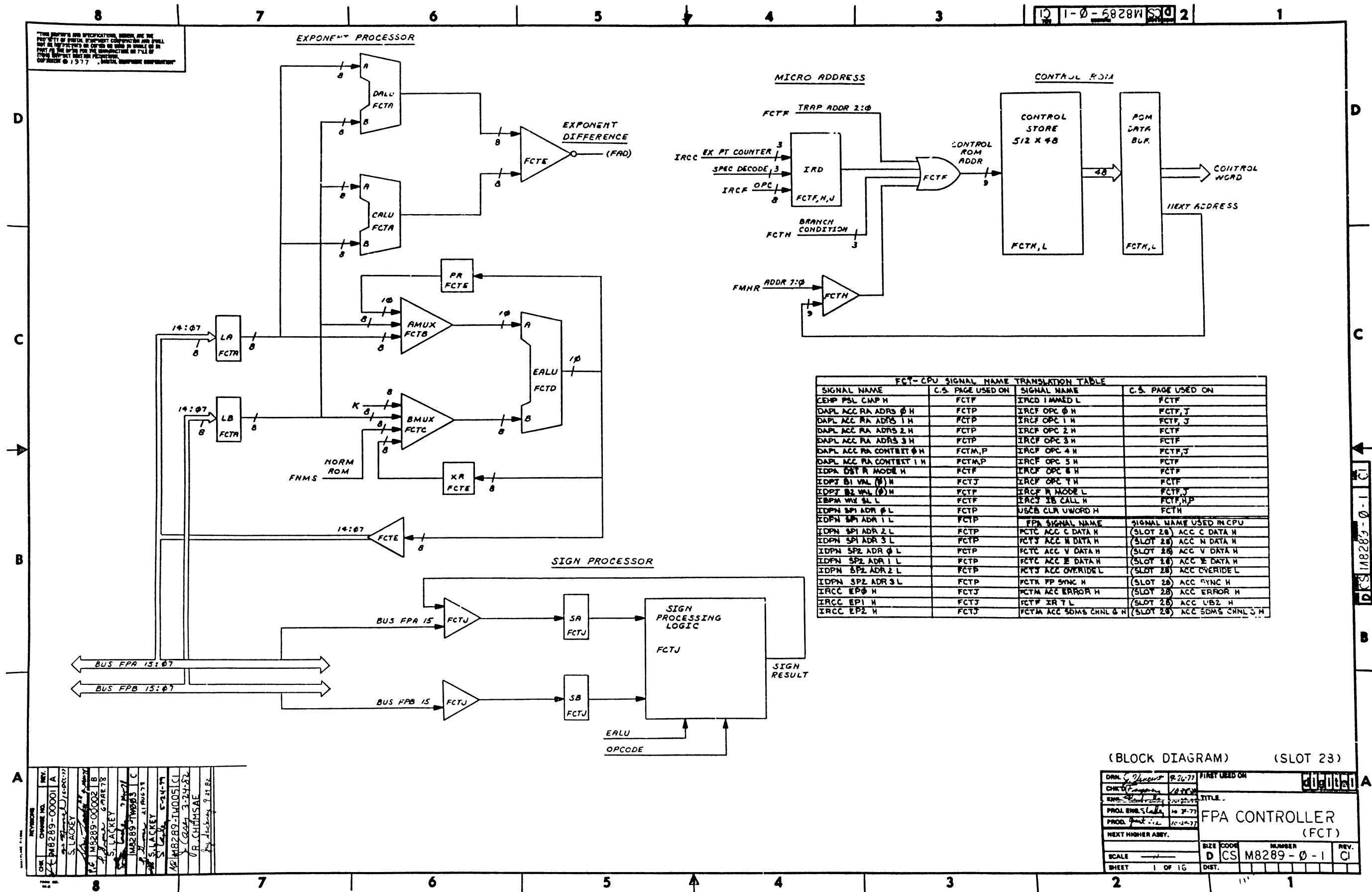
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2	2		1012784-00 .047 MFD 50V +80-20% CER	91	C1,C3,C7-C73,C75-C95,C104
3	3		1012084-01 8 MFD 25V +75-10% AL EL	7	C96-C102
4	4		1301775-00 820.0 .25 W 5.0 % CC	5	R1,R3,R5,R7,R9
5	5		1300295-00 330.0 .25 W 5.0 % CC	5	R2,R4,R6,R8,R10
6	6		1300247-00 120.0 .25 W 5.0 % CC	6	R11,R13,R15,R17,R19,R21
7	7		1300250-00 150.0 .25 W 5.0 % CC	6	R12,R14,R16,R18,R20,R22
8	8		1301890-00 560.0 .25 W 5.0 % CC	3	R23,R25,R28
9	9		1301972-00 270.0 .25 W 5.0 % CC	3	R24,R26,R27
10	10		1300365-00 1.0 K .25 W 5.0 % CC	1	R29
11	11		1910552-00 74S194 SHIFT REG.,4BIT RIGH	19	E1,E13,E23,E10,E41,E80,E81, E83-E94
12	12		1910531-00 DEC 74S181 ALU-4BIT	9	E2,E4,E32,E33,E34,E37,E38,E47, E48
13	13		1910547-00 74S153 MUX 1 OF 4 (DUAL)	12	E3,E5,E16,E40,E42,E49,E51,E52, E53,E54,E68,E15
14	14		1910537-00 74S11 AND GATE-TRIPLE 3INP	3	E9,E64,E148
15	15		1910542-00 74S64 A-0-I GATE 4-2-3-2	10	E11,E12,E20,E25,E26,E27,E29,E44, E132,E140
16	16		1913670-00 74S373 LATCH 8BIT TRASP TR	2	E14,E135
17	17		1911641-00 SN 74S257 MUX,QUAD 2 TO 1	2	E17,E19
18	18		1910534-00 74S04 INVERTER GATE-HEX 1I	9	E21,E35,E59,E61,E72,E122,E126, E138,E7
19	19		1912389-00 74S08 AND GATE-QUAD 2IN,PO	5	E22,E45,E57,E139,E147
20	20		1912746-00 DEC 74S37 NAND GATE-QUAD 2IN	5	E24,E43,E58,E95,E96
21	21		1913839-00 LS165 SHIFT REG.,8BIT	3	E30,E55,E56
22	22		1910532-00 74S00 NAND GATE-QUAD 2IN	10	E31,E73,E111,E116,E118,E125, E129,E130,E141,E28
23	23		1912388-00 74S02 NOR GATE-QUAD 2IN,PO	5	E36,E46,E62,E128,E142
24	24		1910549-00 74S158 MUX 1 OF 2 (QUAD)	5	E50,E113,E114,E131,E39

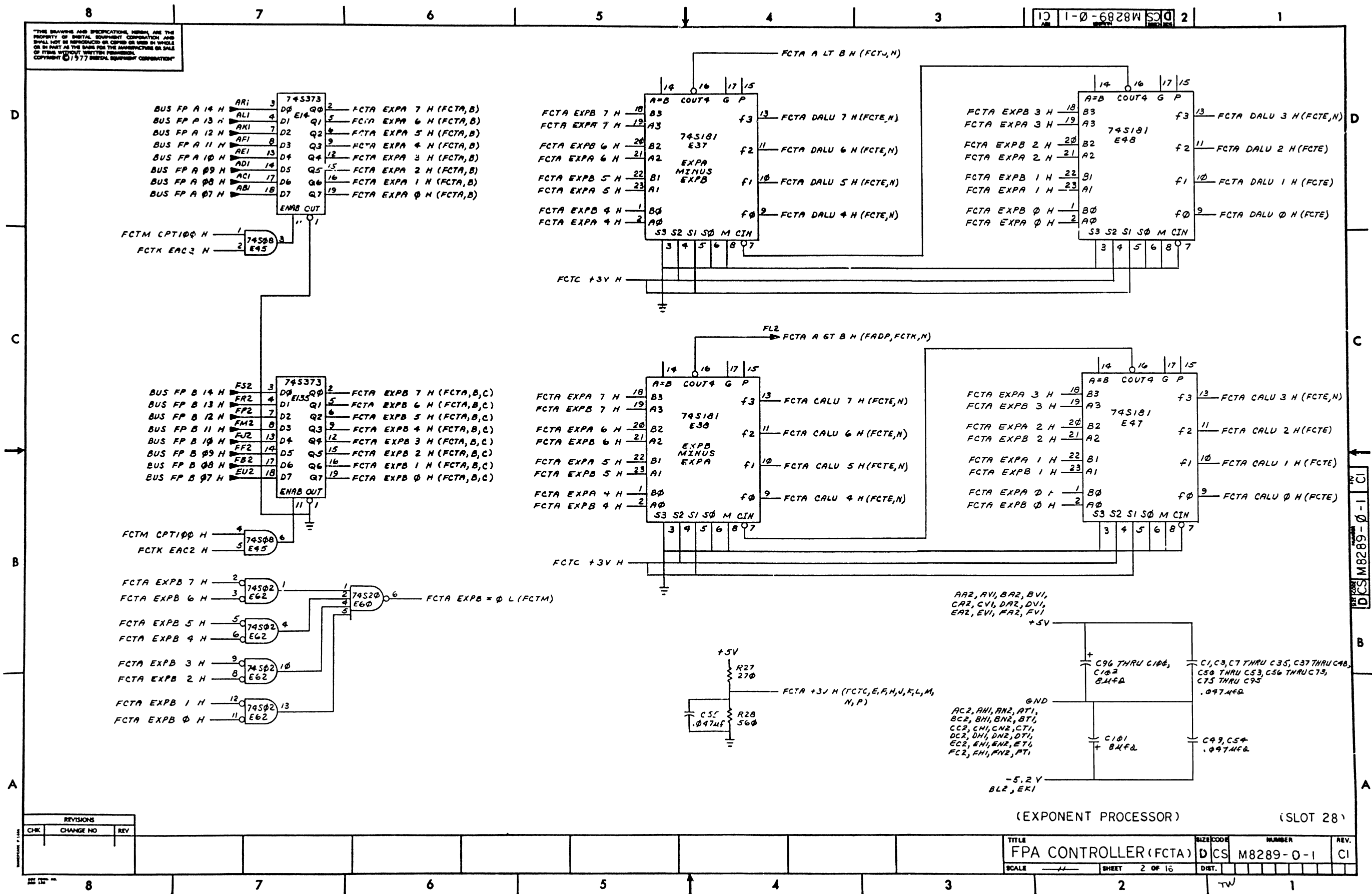
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---	INIT	*	SECTION VARIATION INDEX		DES.ENG: R.CHUMSEA		DATE: 1-OCT-80		FPA CONTROLLER			
WH	00001	A	[A]	00	RESP.ENG.: R.CHUMSEA		DATE: 1-OCT-80		DOCUMENT NUMBER			
P.G	00002	B	[B]		MFG.ENG.: M.WARSHAW		DATE: 2-OCT-80		SIZE	CODE	NUMBER	REV
J.F	00003	C	[C]		ASSEMBLY NUMBER:		TOP DOCUMENT NUMBER:		K	PL	M8289-0-DBP	E
RC	TW004	D	[D]		D-UA-M8289-0-0		M8289		FILE NAME:		EDIT #	
RC	TW004	D	[E]						Z0391E.PLS		31	
R.C	TW005	E	[F]									
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			[L]									
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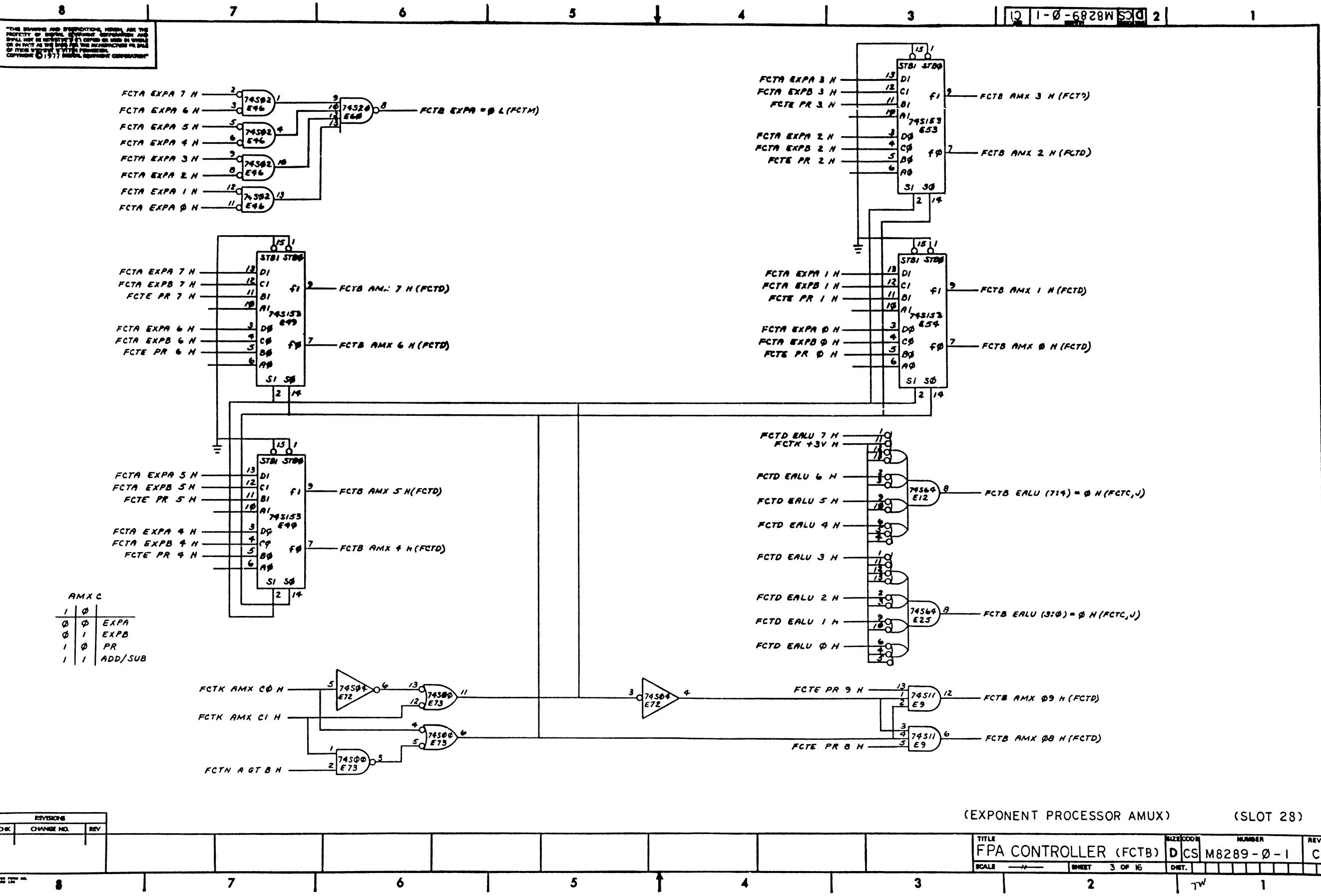
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26	26		2303681-00	B1-01	1	E67
27	27		1911415-00	10125 ECL TO TTL TRNSLTR	2	E69,E82
28	28		1910544-00	74S74 FF-D DUAL,EDGE TRIGG	5	E70,E71,E115,E134,E18
29	29		1910956-00	74S151 MUX 1 OF 8	7	E74-E78,E137,E8
30	30		1912097-00	SN 74S182 LOOK AND CARRY GEN	1	E79
31	31		1910550-00	74S174 FF-D HEX	1	E110
32	32		1911675-00	74S138 DECODER/DEMUX 3-8 LIN	2	E112,E124
33	33		1910545-00	74S112 FF-JK DUAL,EDGE TRIG	1	E117
34	34		1912096-00	DEC 74S86 XOR GATE,QUAD 2IN	2	E119,E120
35	35		1910536-00	74S10 NAND GATE-TRIPLE 3IN	4	E6,E136,E143,E144
36	36		1911712-00	74S51 AND-OR GATE-INVERT D	1	E133
37	37		1910539-00	74S20 NAND GATE-DUAL 4INPU	3	E60,E65,E146
38	38		23778A9-00	A9-01	1	E100
39	39		23779A9-00	A9-01	1	E101
40	40		23599A9-00	A9-01	1	E102
41	41		23748A9-00	A9-01	1	E106
42	42		23749A9-00	A9-01	1	E107
43	43		23602A9-00	A9-01	1	E108
44	44		23603A9-00	A9-01	1	E97
45	45		23750A9-00	A9-01	1	E98
46	46		23780A9-00	A9-01	1	E99
47	47		23781A9-00	A9-01	1	E103
48	48		23607A9-00	A9-01	1	E104
49	49		23608A9-00	A9-01	1	E105
50	50		1216988-02	HANDLE,MODULE,HEX TWO EJECTORS	1	
51	51		9000024-01	EYELET,ROLLED 0.12100X0.192	12	
52	52		9105740-55	WIRE(WRAP) 30AWG KYNAR UL14	A/R	

53 NOTE: IC SPARE LOCATIONS ARE E6

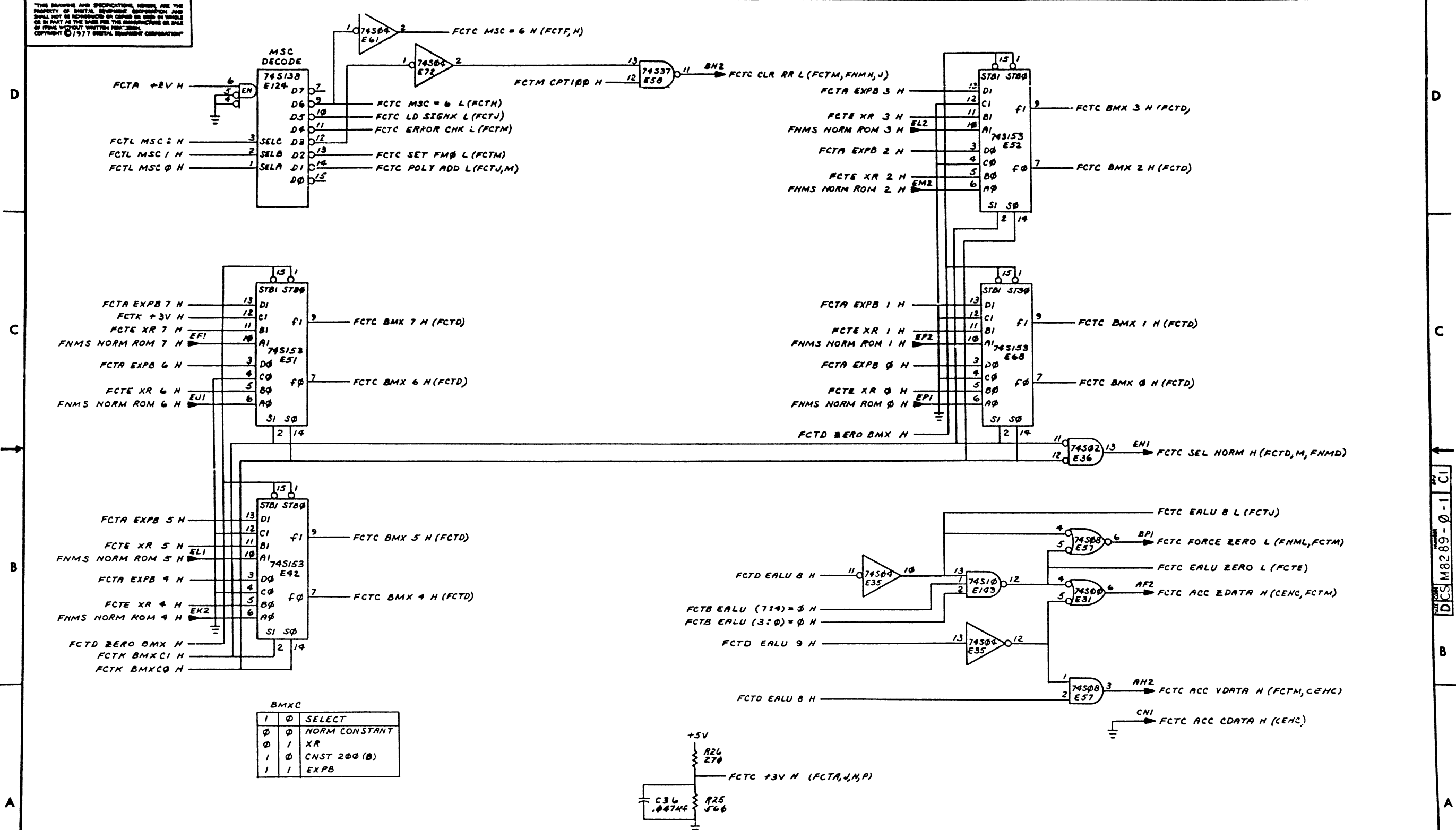
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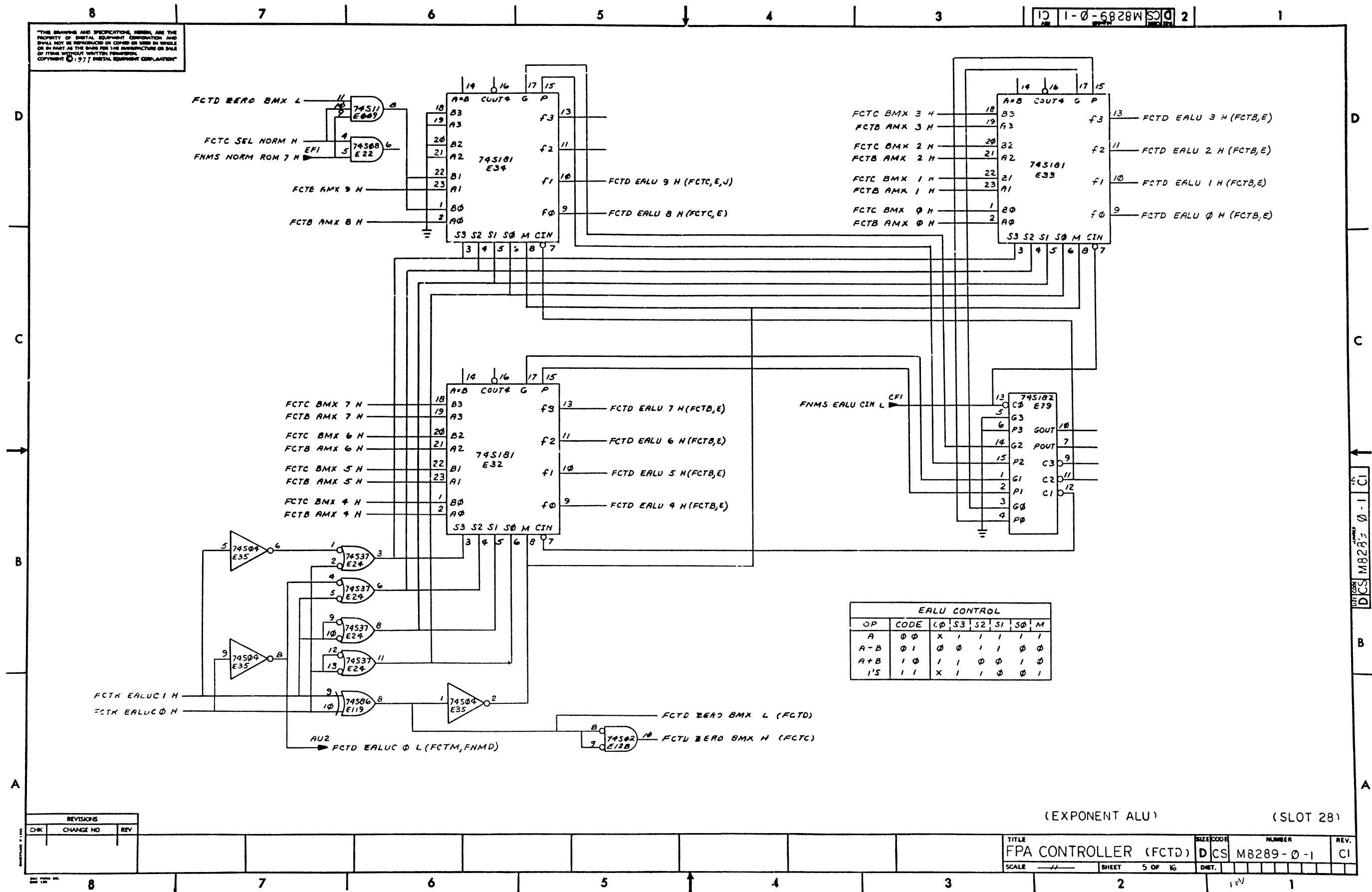
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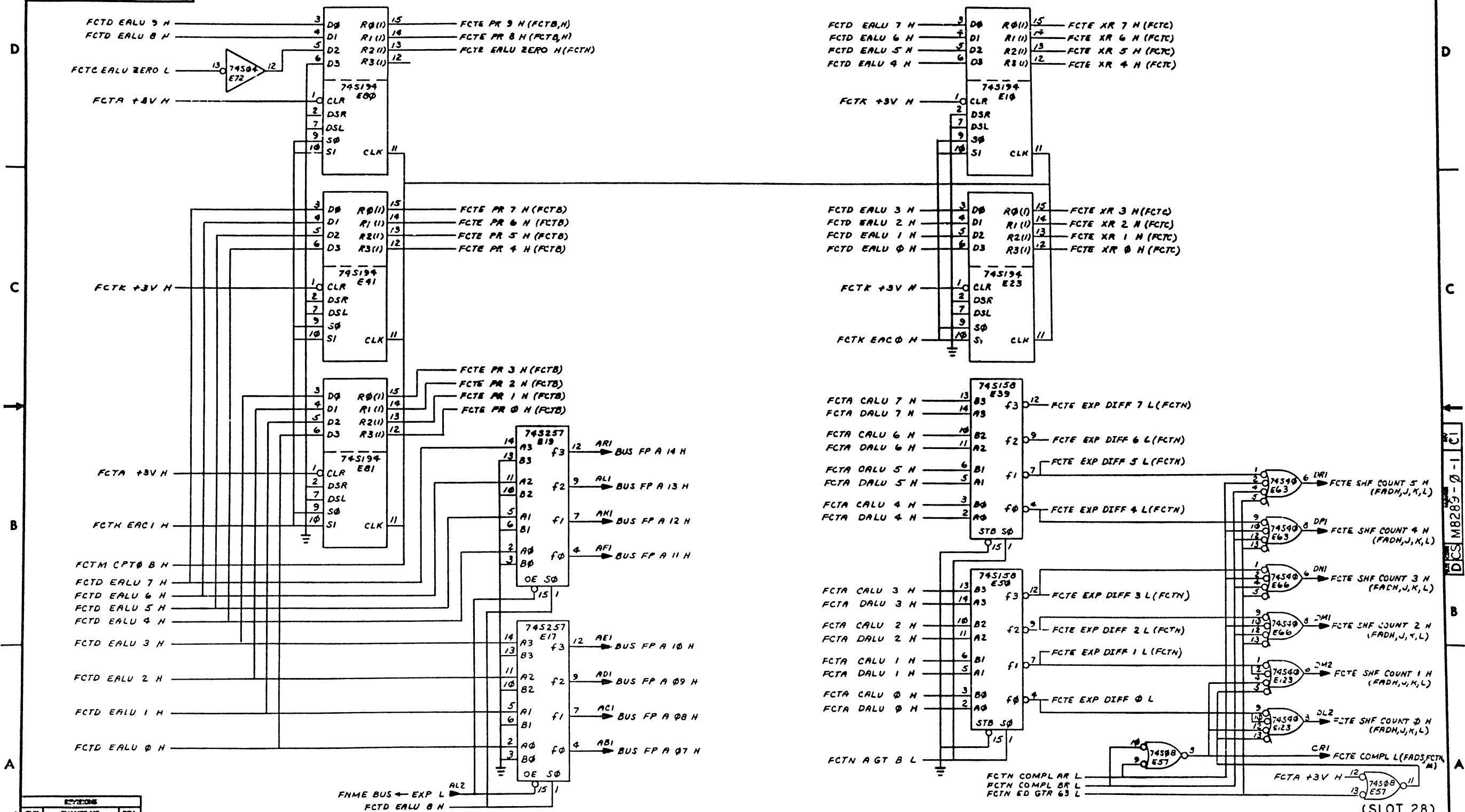
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REVISIONS												
CHK	CHANGE NO.	REV.										

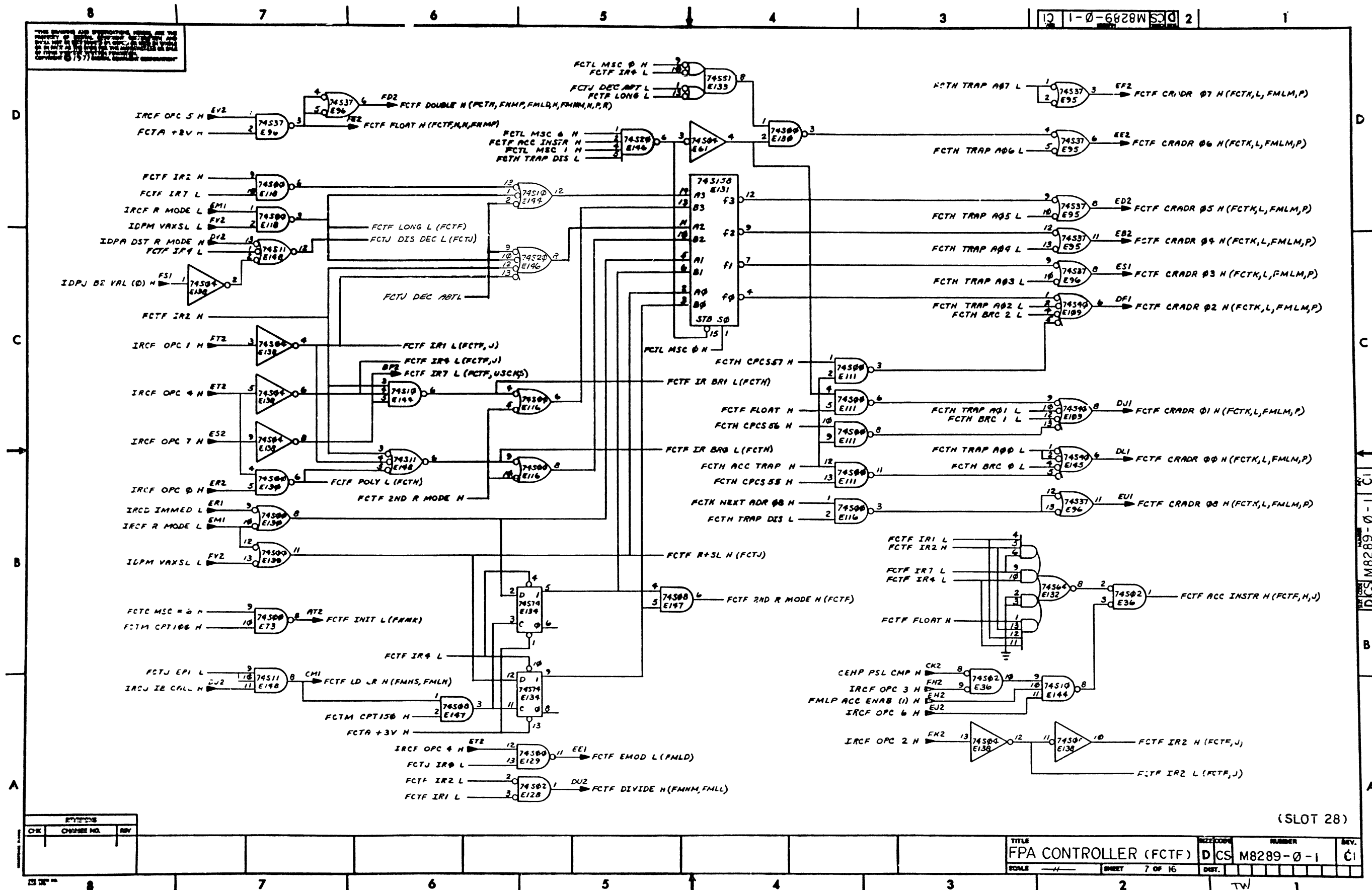
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FPA CONTROLLER (FCTC)	D CS	M8289-0-1	CI
SCALE	SHEET	4 OF 16	DIST.

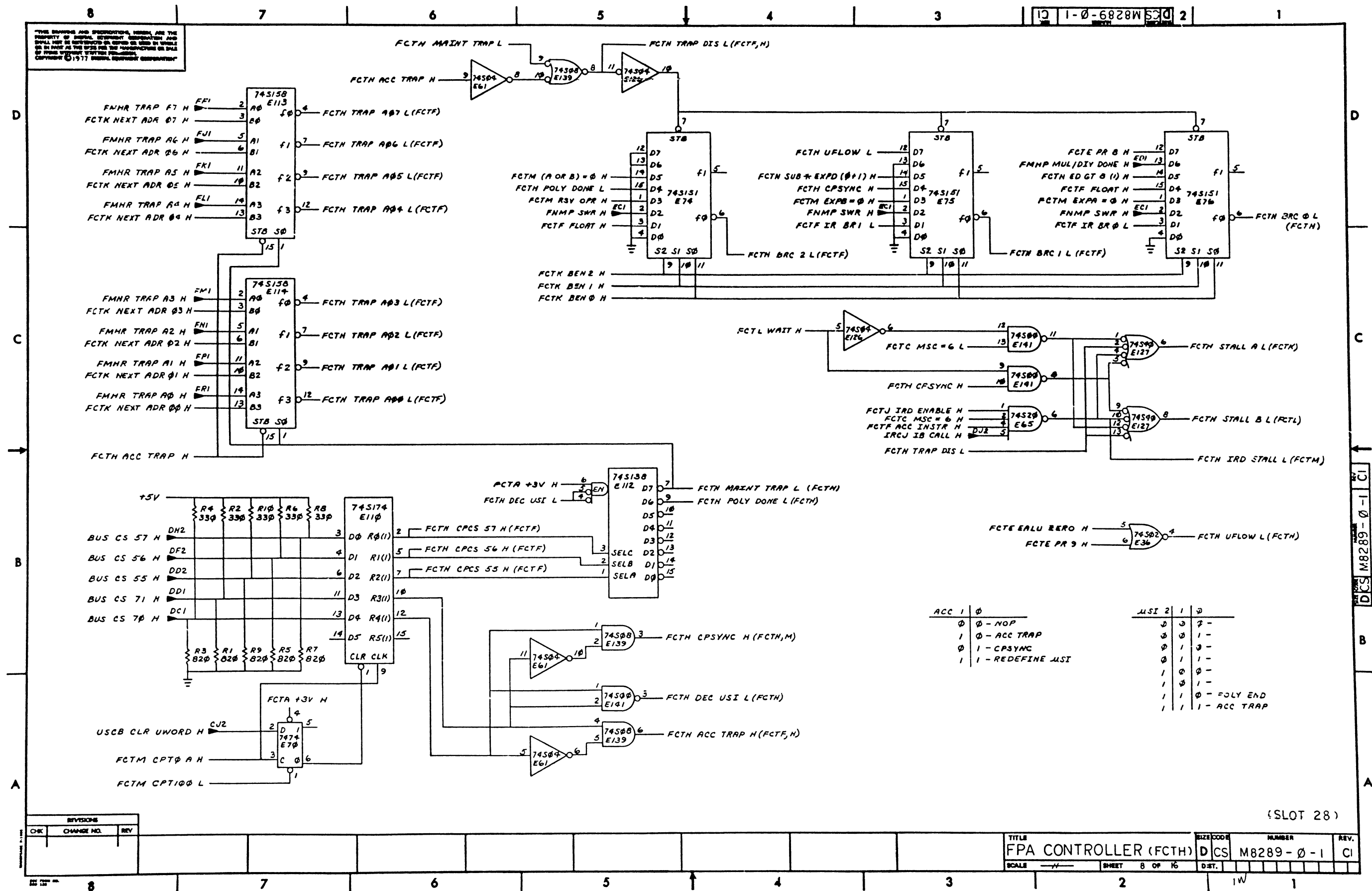


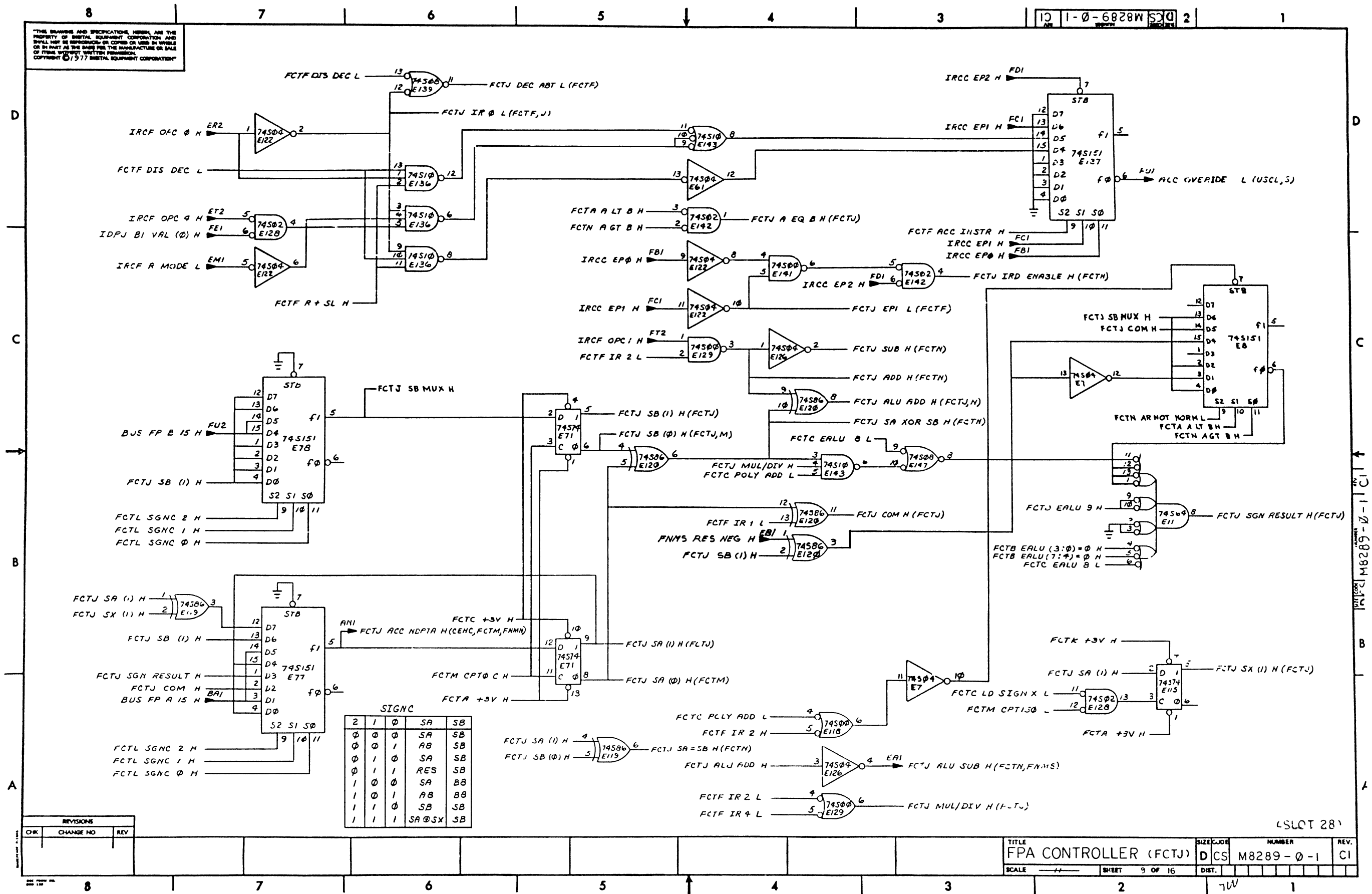
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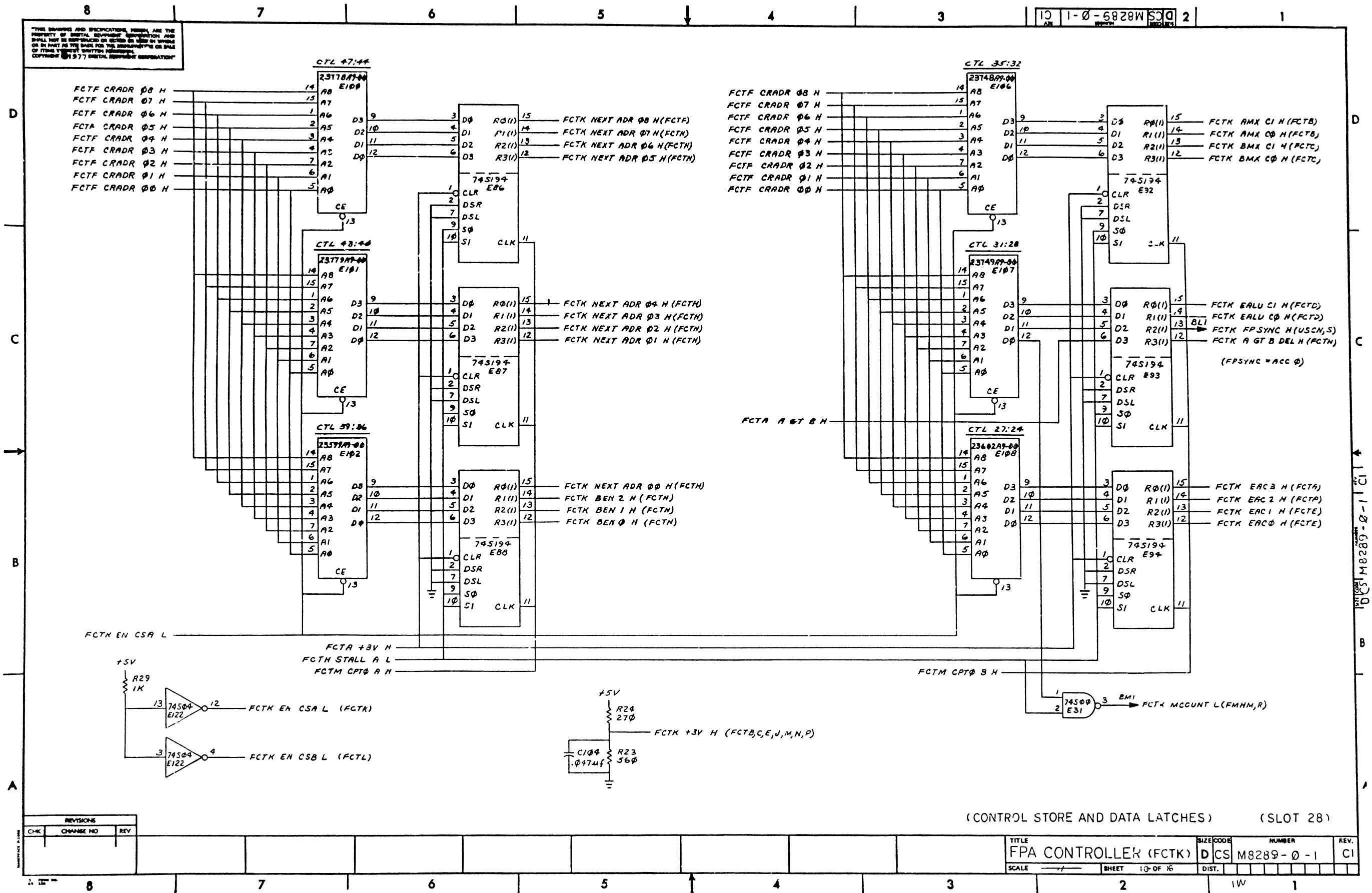


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OK	CHG	NO.	FPA CONTROLLER (FCTE)		D CS M8289-0-1		CI	
			SCALE		SHEET 6 OF 16		DWT.	







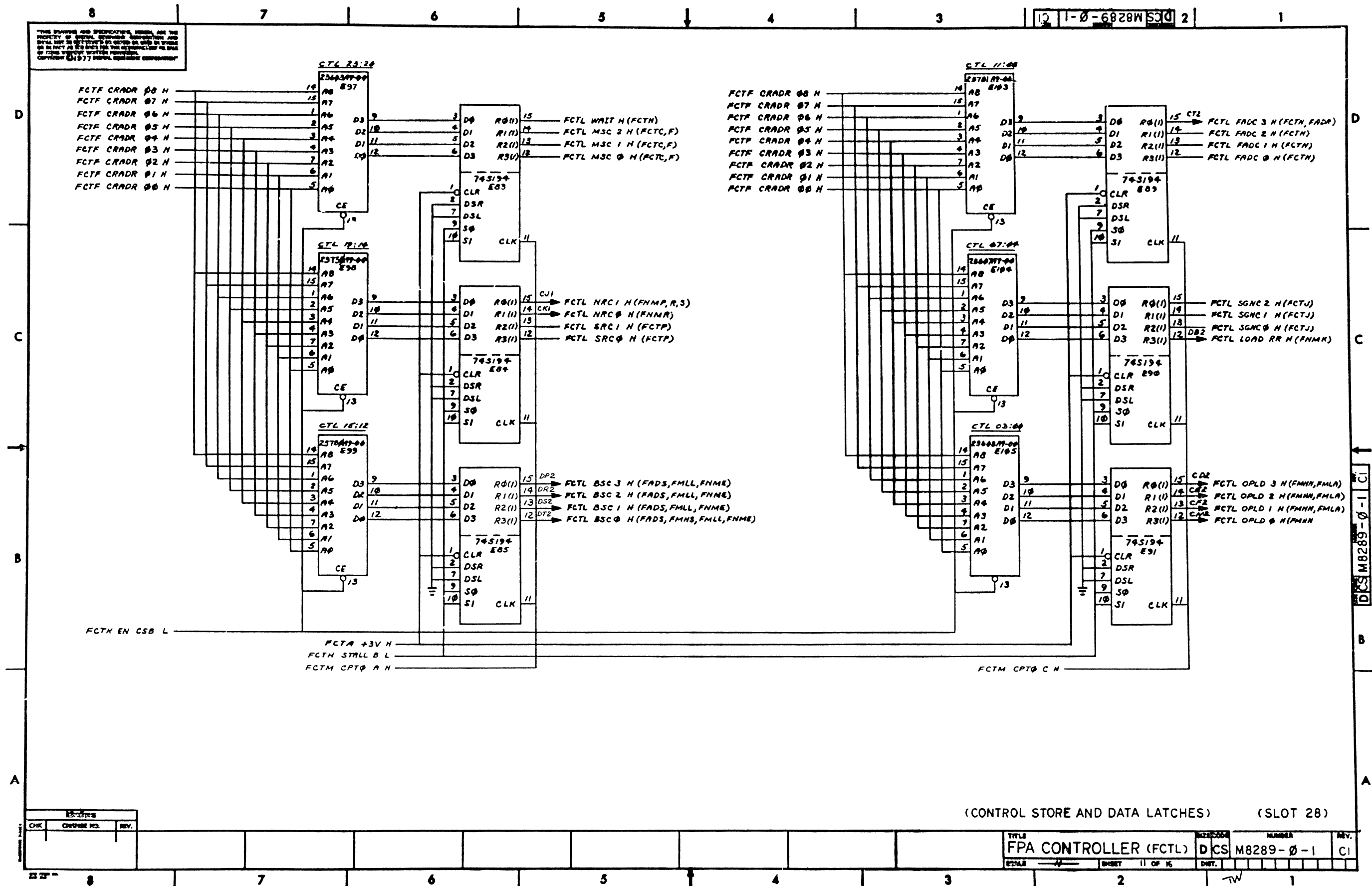


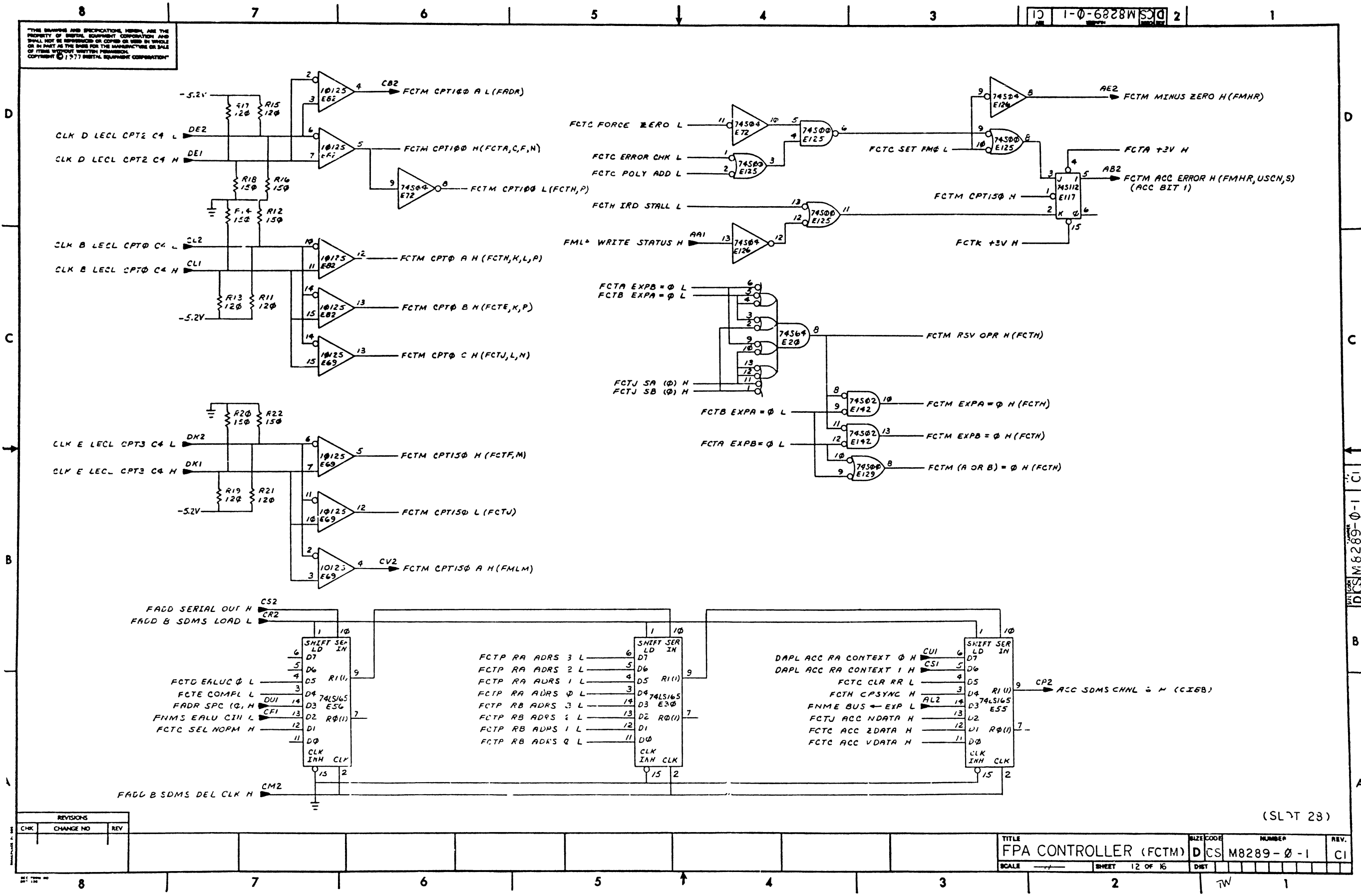
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10 1-0-6828W S30 2

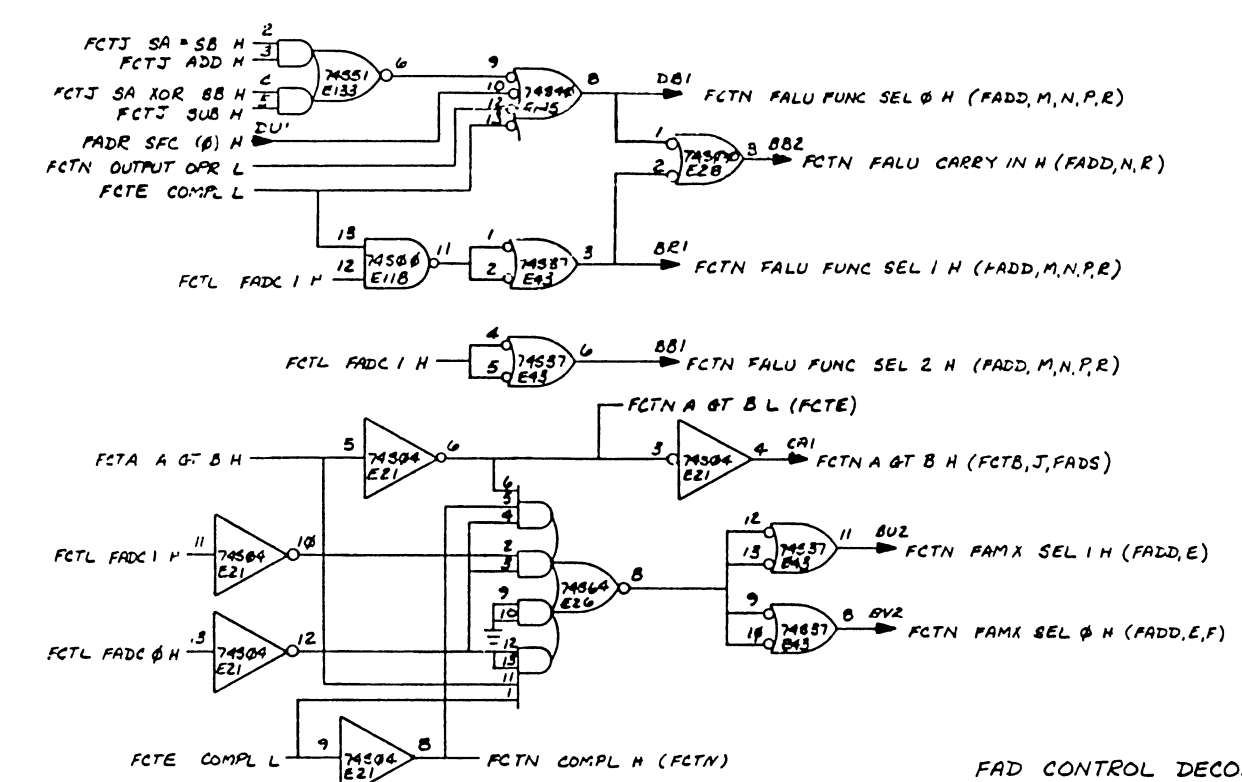
REVISIONS		
CHK	CHANGE NO	REV

TITLE		SIZE/CODE	NUMBER	REV.
FPA CONTROLLER (FCTK)		D CS	M8289-0-1	CI
SCALE		SHEET	10 OF 16	DIST.





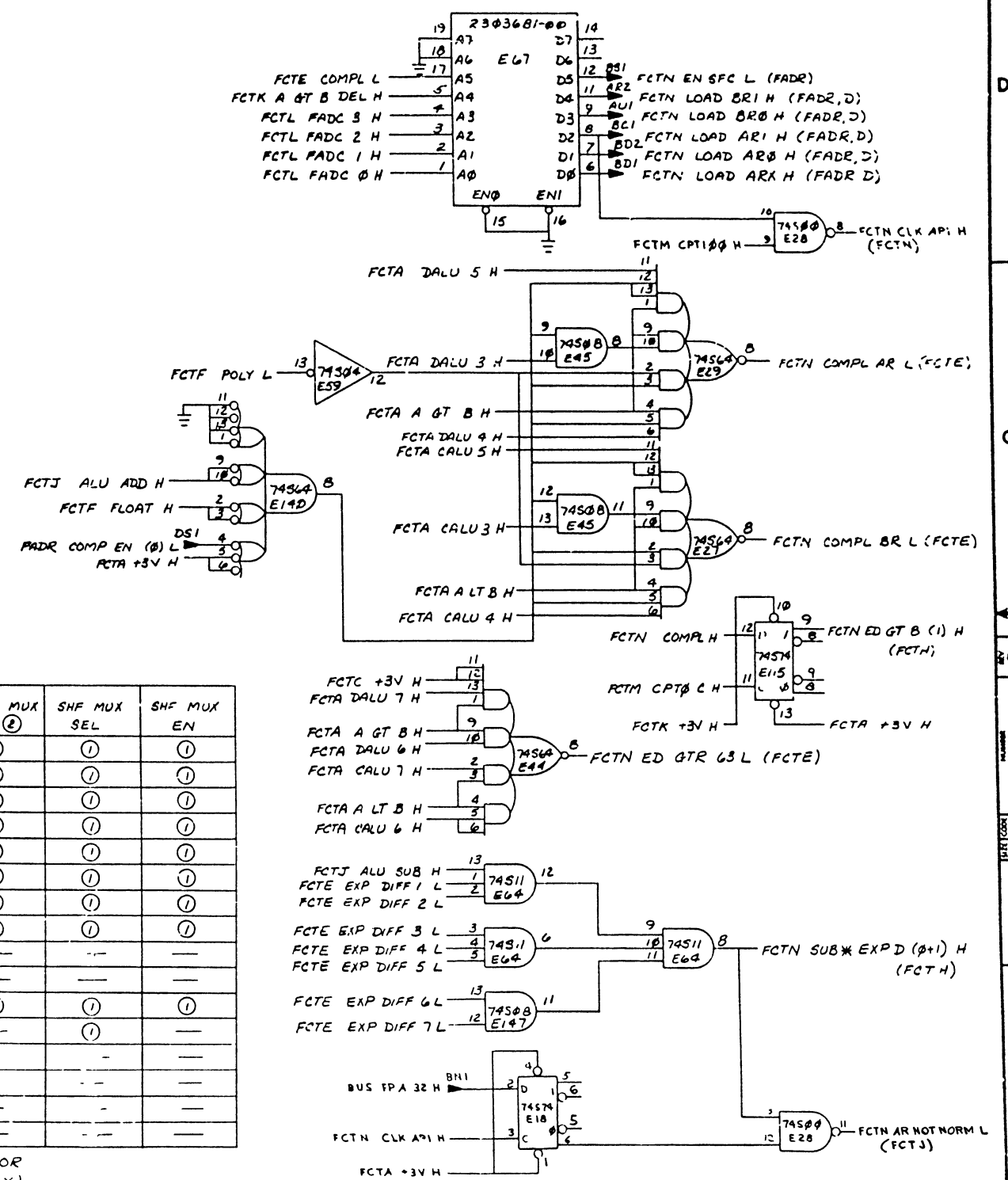
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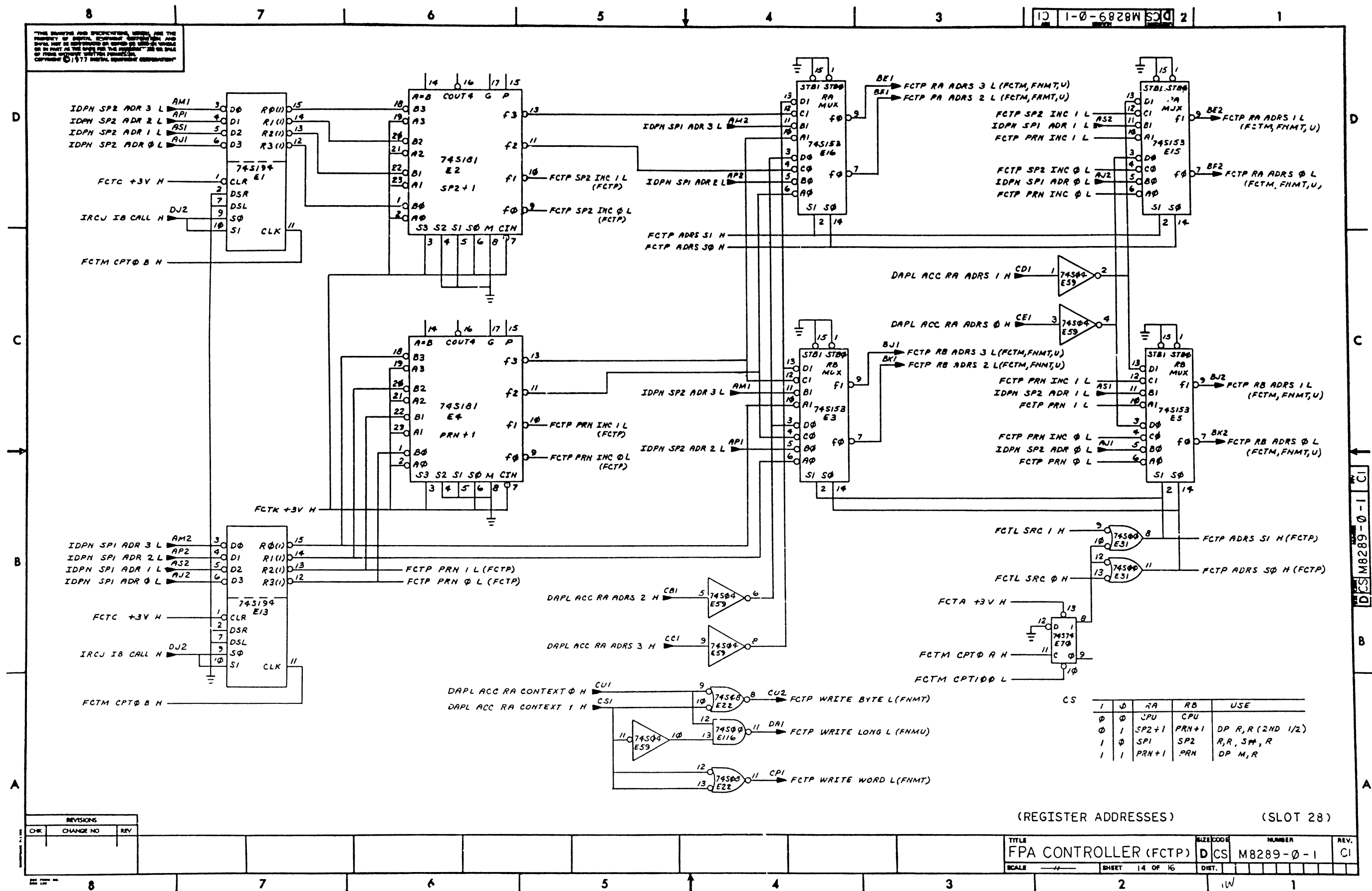
FAD CONTROL DECODE

FALU CTL		BIN		OPERATION	LOAD (2)		ADDER MUX SEL (2)	SHF MUX SEL	SHF MUX EN
SZ	SI	S0	ALUOP		AR	AX			
0	1	0	A+B	LOAD AR	1	1	0	0	0
0	1	0	A-B	LOAD BR	0	0	1	0	0
0	1	0	A-B	LOAD AR1	1	0	0	0	0
0	1	0	A-B	LOAD AR1, BR1	1	0	1	0	0
0	1	0	A-B	LOAD BR	0	0	1	1	0
0	1	0	A-B	LOAD BR0	0	0	0	1	0
0	1	0	A-B	LOAD AR0	0	1	0	0	0
0	1	0	A-B	LOAD AR0, BR0	0	1	0	1	0
-	-	-	1 0 0 0	LOAD ALL	1	1	1	1	-
-	-	-	1 0 0 1	NOT USED	0	0	0	0	-
0	1	0	A-B	A-B	0	0	0	0	0
-	-	-	1 0 1 1	NOT USED	0	0	0	0	-
1	0	1	A0RB	OUTPUT A	0	0	0	0	-
1	0	1	A0RB	OUTPUT B	0	0	0	0	-
-	-	-	1 1 1 0	NOT USED	0	0	0	0	-
-	-	-	1 1 1 1	NOT USED	0	0	0	0	-

- ① - MUX SELECTS DETERMINED BY EXPONENT PROCESSOR
- ② - IN CASE OF DP SUB AND (EXP DIFF GTR THAN 7 OR POLY), HARDWARE FORCES AN ALTERNATE FUNCTION
- ③ - ADD/SUB DETERMINED BY OPCODE AND SIGNS



(FALU CTL + EXP PROC CTL) (SLOT 28)



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FAD CONTROL PROM DECODE (23056BI-00)

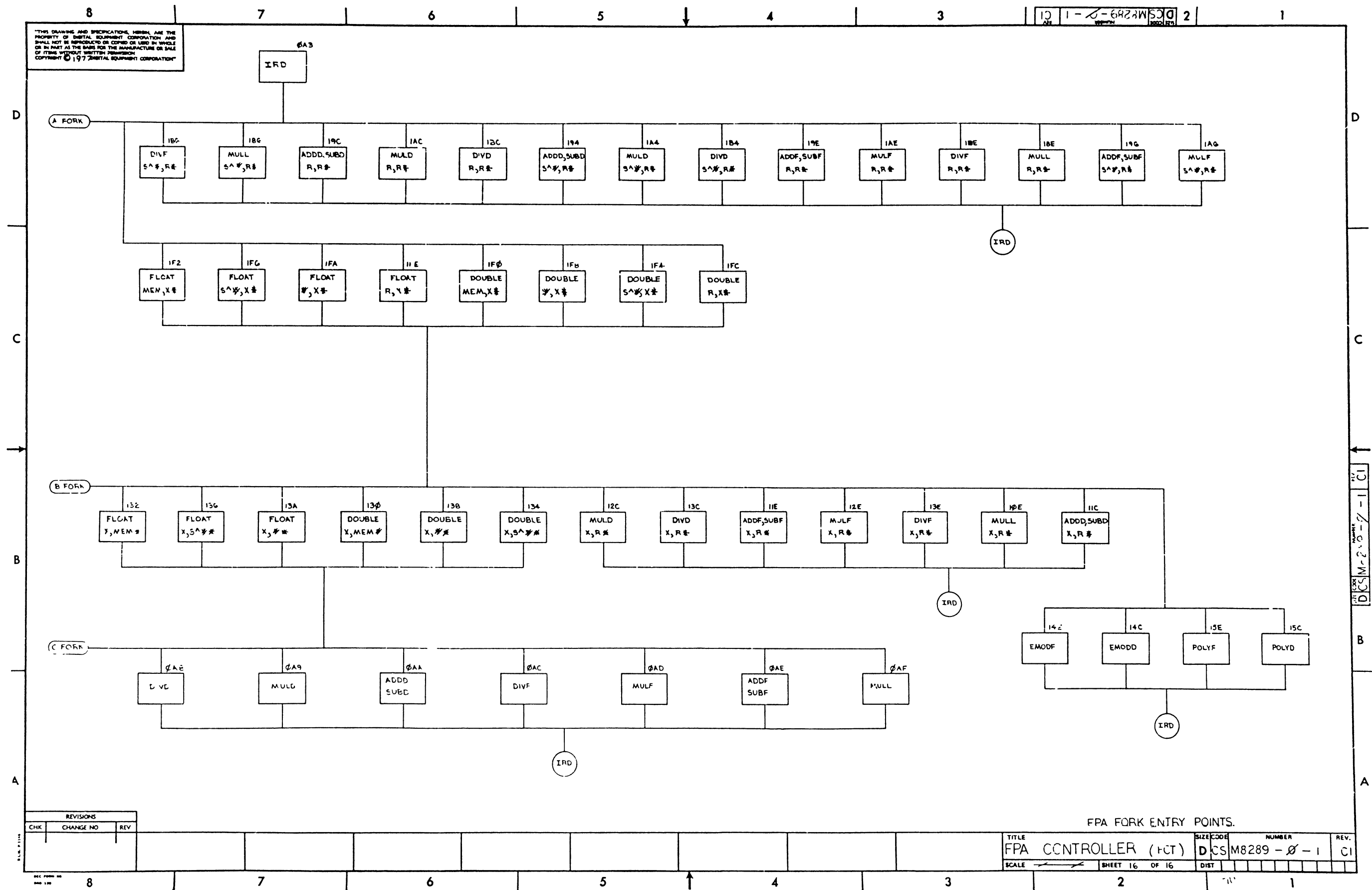
PROM ADDR	FAD CTL	PROM DATA								
		D7	D6	D5	D4	D3	D2	D1	D0	
00	00	X	X	H	L	L	H	H	H	
01	01	X	X	H	H	L	L	L	L	
02	02	X	X	H	L	L	H	L	L	
03	03	X	X	H	H	L	L	L	L	
04	04	X	X	H	H	H	L	L	L	
05	05	X	X	H	L	H	L	L	L	
06	06	X	X	H	L	L	L	H	L	
07	07	X	X	H	L	H	L	H	L	
08	08	X	X	H	H	H	H	H	H	
09	09	X	X	L	L	L	L	L	L	
0A	0A	X	X	L	L	L	H	H	H	
0B	0B	X	X	L	L	L	L	L	L	
0C	0C	X	X	H	L	L	L	L	L	
0D	0D	X	X	H	L	L	L	L	L	
0E	0E	X	X	L	L	L	L	L	L	
0F	0F	X	X	L	L	L	L	L	L	
10	00	X	X	H	L	L	H	H	H	
11	01	X	X	H	H	L	L	L	L	
12	02	X	X	H	L	L	H	L	L	
13	03	X	X	H	H	L	H	L	L	
14	04	X	X	H	H	H	L	L	L	
15	05	X	X	H	L	H	L	L	L	
16	06	X	X	H	L	L	L	H	L	
17	07	X	X	H	L	H	L	H	L	
18	08	X	X	H	H	H	H	H	H	
19	09	X	X	L	L	L	L	L	L	
1A	0A	X	X	L	H	H	L	L	L	
1B	0B	X	X	L	L	L	L	L	L	
1C	0C	X	X	H	L	L	L	L	L	
1D	0D	X	X	H	L	L	L	L	L	
1E	0E	X	X	L	L	L	L	L	L	
1F	0F	X	X	L	L	L	L	L	L	

PROM ADDR	FAD CTL	PROM DATA								
		D7	D6	D5	D4	D3	D2	D1	D0	
20	00	X	X	H	L	L	H	H	H	
21	01	X	X	H	H	L	L	L	L	
22	02	X	X	H	L	L	H	L	L	
23	03	X	X	H	H	L	H	L	L	
24	04	X	X	H	H	H	L	L	L	
25	05	X	X	H	L	H	L	L	L	
26	06	X	X	H	L	L	L	H	L	
27	07	X	X	H	L	H	L	H	L	
28	08	X	X	H	H	H	H	H	H	
29	09	X	X	L	L	L	L	L	L	
2A	0A	X	X	H	L	L	L	L	L	
2B	0B	X	X	L	L	L	L	L	L	
2C	0C	X	X	H	L	L	L	L	L	
2D	0D	X	X	H	L	L	L	L	L	
2E	0E	X	X	L	L	L	L	L	L	
2F	0F	X	X	L	L	L	L	L	L	
30	00	X	X	H	L	L	H	H	H	
31	01	X	X	H	H	L	L	L	L	
32	02	X	X	H	L	L	H	L	L	
33	03	X	X	H	H	L	H	L	L	
34	04	X	X	H	H	H	L	L	L	
35	05	X	X	H	L	H	L	L	L	
36	06	X	X	H	L	L	L	H	L	
37	07	X	X	H	L	H	L	H	L	
38	08	X	X	H	H	H	H	H	H	
39	09	X	X	L	L	L	L	L	L	
3A	0A	X	X	H	L	L	L	L	L	
3B	0B	X	X	L	L	L	L	L	L	
3C	0C	X	X	H	L	L	L	L	L	
3D	0D	X	X	H	L	L	L	L	L	
3E	0E	X	X	L	L	L	L	L	L	
3F	0F	X	X	L	L	L	L	L	L	

REVISIONS		
CHK	CHANGE NO	REV

FAD PROM DECODE TRUTH TABLE (SLOT 28)

TITLE		SIZE CODE	NUMBER	REV.
FPA CONTROLLER (FCT)		D	CSM8289 - 0 - 1	CI
SCALE	SHEET 15 OF 16	DIST.		



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